SOCIOLOGY

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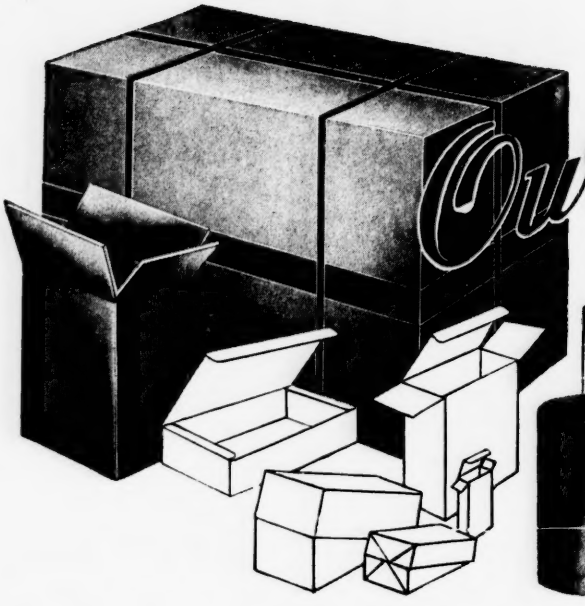


# Our 75th Year...

1868 - 1943

- CORRUGATED SHIPPING CASES
- FOLDING CARTONS
- FIBER DRUMS
- MULTI-WALL BAGS
- GARMENT BAGS
- GROCERY BAGS
- TEXTILE PACKAGING SPECIALTIES

In the seventy-five years since Apaco was founded we have seen America face wars, panics, depression and disaster . . . and from each crisis emerge stronger than before!

Today, our country is engaged in a desperate struggle to determine whether the freedom we have created and cherished shall survive or perish.

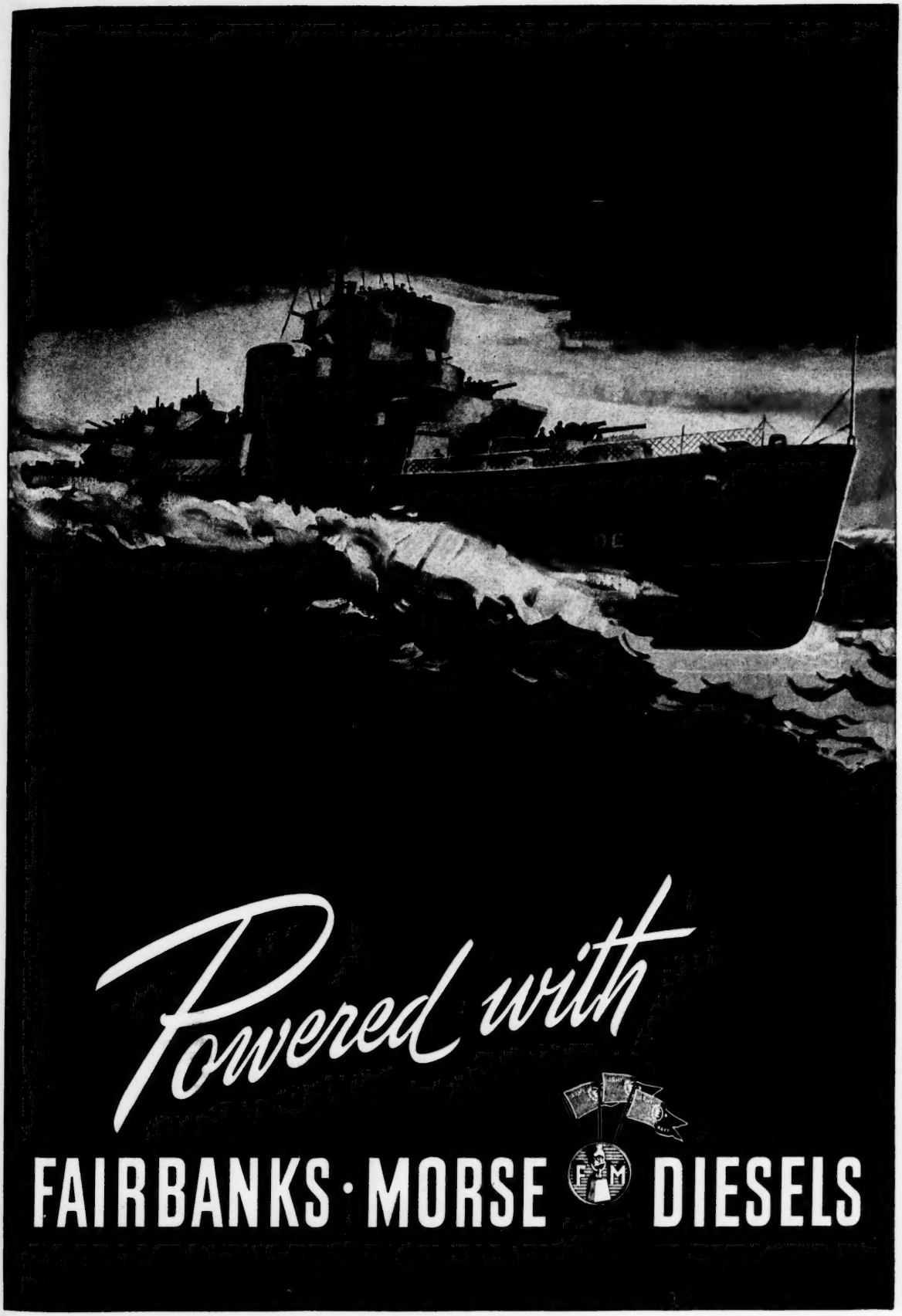
The Diamond Anniversary which the Atlanta Paper Company celebrates this year is of small importance compared to the all-embracing immensity of that issue. Yet . . . it is only proper that we should voice our faith in the future.

***APACO was founded and built on Faith . . . Faith in the continued growing greatness of our country. And, we confidently believe that America will emerge again, steeled by adversity and strife, to enter a new era of glorious achievement!***

## Atlanta PAPER Company

★ BUY MORE WAR BONDS

ATLANTA, GEORGIA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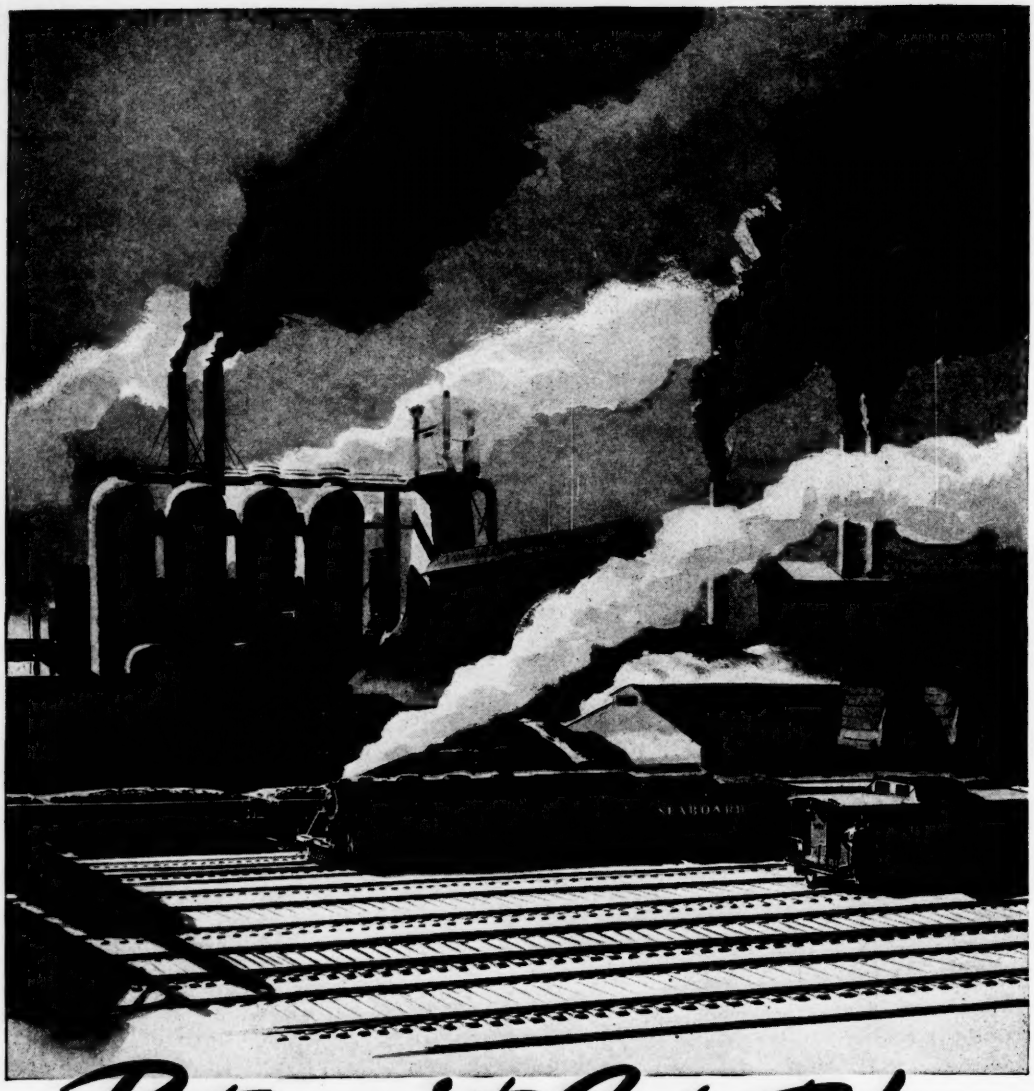

# Partners with Industry!

The railroads of America are backing industry to the limit in the war of production. Only the close coordination born of a common cause could result in the extraordinary achievements of transportation and industry since the war began.

For many years the Seaboard Railway has recognized the interdependence of industry and transportation.

On the established principle that the welfare of the railroad depends upon the prosperity of its patrons, the Seaboard has been working over a long period of time for the economic development of the territory it serves.

The Seaboard's interest extends beyond the location of new plants. It is equally concerned with the success of all industry served by its Line. Its policy is to provide adequate service and to adjust the freight rates on raw materials and finished products to enable these industries to compete with similar industries whether located in the South or elsewhere.

Remarkable progress has been made in the industrial development of the South in recent years. Present indications point to further expansion in the post-war period.

Seaboard will work in the future—as in the past—as Partners With Industry.

For information as to plant sites, manufacturing conditions, etc., write Warren T. White, General Industrial Agent, Norfolk, Virginia.

**SEABOARD RAILWAY**

ONE OF AMERICA'S RAILROADS • ALL UNITED FOR VICTORY

BACK THE ATTACK
WITH WAR BONDS

# MANUFACTURERS RECORD

***Established 1882***

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SEPTEMBER, 1943

Volume 112, Number 9

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MANUFACTURERS RECORD PUBLISHING CO.

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Subscription Rates: One Year $3.00. Two Years $5.00.
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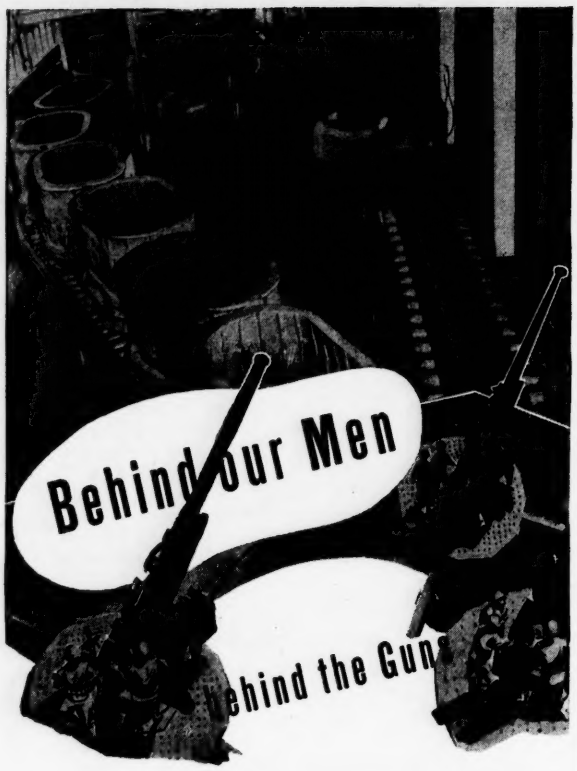
**Entered as second class matter at the postoffice, Baltimore, Md., U.S.A., under act of** March 3, 1879. Volume 112, Number 9, Monthly.

Means of communication and modes of transportation, which abridge time and foreshorten distance, helped to build our nation, making it compact, strong, resourceful ★ Railroads have effectively served America in times of peace and war for more than a century. Throughout three generations Westinghouse Air Brakes have provided security and facility in the movement of trains for every class of service ★ Today, rail carriers are performing with distinction their Herculean role in our war for survival, to the end that all of us may quickly return to serving needs of a nation at peace.

★

*In addition to maintaining the flow of vital air brake apparatus to the railroads, we are using our unique facilities and techniques in the manufacture of large volumes of precision parts for many types of war equipment.* » » » »

*Westinghouse...*
AIR BRAKE CO.
WILMERDING, PA




**BACK UP FIGHTING COURAGE** with the deadliest guns, bombs, tanks and planes, and you've got America's formula for victory.

There's no surer way to shorten the war . . . no surer way to save the lives of our fighting men . . . no surer way to save our American way of life.

Speeding up assembly . . . removing production bottlenecks . . . preventing hitches in the speeding movement of vital war materials is Mathews' contribution to America's war effort.

**MATHEWS CONVEYERS FOR MECHANIZED PRODUCTION**

If you are manufacturing war material, or anything vital to the success of the war effort, you can get Mathews Conveyers to handle that material. Rely as usual on your Mathews Engineer.

MATHEWS CONVEYER COMPANY ELLWOOD CITY PENNSYLVANIA

# Little Grains of Sand

*"Little drops of water, little grains of sand,*
*Make the mighty ocean, and the pleasant land."*

In this issue of the MANUFACTURERS RECORD it is our pleasure and privilege to list the companies in the South who have won Army-Navy "E" and Maritime "M" awards. Their contribution to the war effort deserves national recognition.

---

We do not agree with Senator Bankhead of Alabama that the Federal Government should be authorized to buy space in newspapers and magazines to advertise the desirability of the purchase of war bonds.

We do agree with the Senator when he says that such a plan will in no way affect the freedom of public expression that is the vital blood stream of news and free opinion.

We believe that every newspaper and magazine is glad and more than willing to publish, free of cost, any publicity that is honest, truthful and will serve the national interest.

If the treasury wants the cooperation of the publishers let the treasury submit its copy to the publishers. If the copy is properly prepared there is not one publisher out of ten—there is certainly no publisher with a speck of patriotism in his make up—who will not be glad to place it in his paper as his contribution to a national cause.

Let's not hear any more about buying the opinion of publishers through advertising or of the need of the government to spend money in order to secure adequate publicity. We know one paper (and there are many more) the opinion of which can not be bought and which is willing to do anything within reason to publish (at its own expense) any advertising from the treasury department that it believes to be true.

---

The American Institute of Public Opinion (Gallup Poll) put the following question to citizens of 13 southern states. These states did not include Maryland, Missouri, and West Virginia. The question was this:

"Would you like to see the South get more factories, that is, become industrial, or should it remain largely agricultural?"

The results:

| | |
|---|---|
| Would Like More Factories | 71% |
| Would Like to Remain Agricultural | 21 |
| Undecided | 8 |

---

A new instruction book has been published by the Office of War Information for the use of editors and writers. On page one it says: "One of the most im-

portant rules in writing and editing copy is to take nothing for granted. Names, terms, geography, dates, statistics and other facts should be checked in every instance." On page two it says: "Never use the full title before the name. Write it Donald B. Nelson, chairman of WPB, etc." Mr. Nelson's middle initial is M.

---

The average man now lives over 30 years longer than he did a century ago. He has to in order to get his taxes paid. . . . The man who really enjoys life is not the man who thinks, but the one who thinks he thinks. . . . It seems incredible—35,000,000 laws and no improvement on the Ten Commandments.

---

The President has a particular responsibility as the head of a nation at war. It is the same responsibility that is drilled into the men in the armed forces. It is the responsibility to be absolutely unselfish as an individual and to obey orders. In the case of the President these orders come from the composite brains of intelligent America. In time of war it is just as much an offense for the commander in chief of the Army and Navy to squander the nation's time playing politician as it is for a soldier or sailor to go AWOL. A summary court deals with the service man who goes AWOL. The supreme court—and we really mean supreme court—of public opinion is quite capable of dealing with the former. Both can be dealt with under due process of law.

---

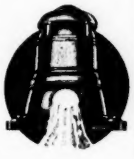
We have the greatest respect for the excellent work being done by the United States Chamber of Commerce and by its house organ so capably edited by our personal friend, Merle Thorpe, but we can not help but get a laugh from the following ad (printed exactly as it appeared) in a circular from the Chamber.

NEW DIRECTORY OF WAR AGENCIES
Available August 14
THIS REVISED 100-page handbook lists:
84 War agencies
365 Subagencies
851 Industry and other advisory committees
1,051 Field offices throughout United States
4,292 Officials in charge of war activities
Single copies free to members; to nonmembers, 25 cents each, postpaid.
*War Service Division*
*Chamber of Commerce of U. S. A.*
*Washington, D. C.*

Is this a serious publication or is it ironical? If it is serious, why not publish a list of the companies who are really doing the work and have received public recognition for what they have done?

Of course we are patting ourselves on the back because that is what we are doing for the South in this issue while we look for the names of Smith and Jones among the 4,292 "Officials in charge of War Activities."

**BACK THE ATTACK ... WITH WAR BONDS**



The third War Loan must have your whole hearted support. Every surplus dollar should be invested in Bonds. The manufacture of Tanks, Planes, Ships, Guns, Bombs, Ammunition and Supplies must go on and on . . . and be increased. A shortage of this or that will mean the loss of more and more lives.

Bond purchasing is a sound business venture. The wealth of your Nation makes them safe. The freedom your dollars will help win will be beyond any dollar value that could be mentioned.

The Third War Loan is being enthusiastically backed by citizens from all walks of life. Industrialists welcome this safe source of investment for their unused capital and profits. We are all in this drive for victory—and we must win!

Our boys are giving their lives. They are enduring sweltering heat, muck, dust, rain and cold. They are not whimpering. They are expecting us to provide them with the implements of war. We must back their attack with our dollars and help them blast a path to Victory. Buy bonds today!

LAYNE & BOWLER, INC.
General Offices, Memphis 8, Tenn.

**AFFILIATED COMPANIES:** Layne-Arkansas Co., Stuttgart, Ark. * Layne-Atlantic Co., Norfolk, Va. * Layne-Central Co., Memphis, Tenn. * Layne-Northern Co., Mishawaka, Ind. * Layne-Louisiana Co., Lake Charles, La. * Louisiana Well Co., Monroe, La. * Layne-New York Co., New York City * Layne-Northwest Co., Milwaukee, Wis. * Layne-Ohio Co., Columbus, Ohio * Layne-Texas Co., Houston, Texas * Layne-Western Co., Kansas City, Mo. * Layne-Western Co. of Minnesota, Minneapolis, Minn. * International Water Supply, Ltd., London, Ontario, Canada.

**LAYNE**
**WELL WATER SYSTEMS**
**DEEP WELL PUMPS**
*Builders of Well Water Systems for Every Municipal and Industrial Need*

# A TIP TO—

# INDUSTRIALISTS

**When the war is over production of civilian goods will be resumed on a scale greater than ever. The needs of America and war-torn Europe will be tremendous.**

•

**New plants will be built for the manufacture of many new products developed during the war and for the production of pre-war goods heretofore made in badly designed or poorly located plants.**

**The wise industrialist will consider locations for new plants in seaport areas when his products can be loaded direct onto steamers for export or into cars at good railroad centers for shipment to domestic markets.**

**At Port Wentworth, Ga., Savannah's fast-growing industrial and terminal area, we have over 3,000 acres of land available as industrial sites. The town of Port Wentworth, established over a quarter century, offers ideal living conditions for employes—all modern conveniences.**

**Port Wentworth is served by our affiliate, Savannah & Atlanta Railway Company, connecting with all trunk lines. It is a transportation center, rail, water, air and highway.**

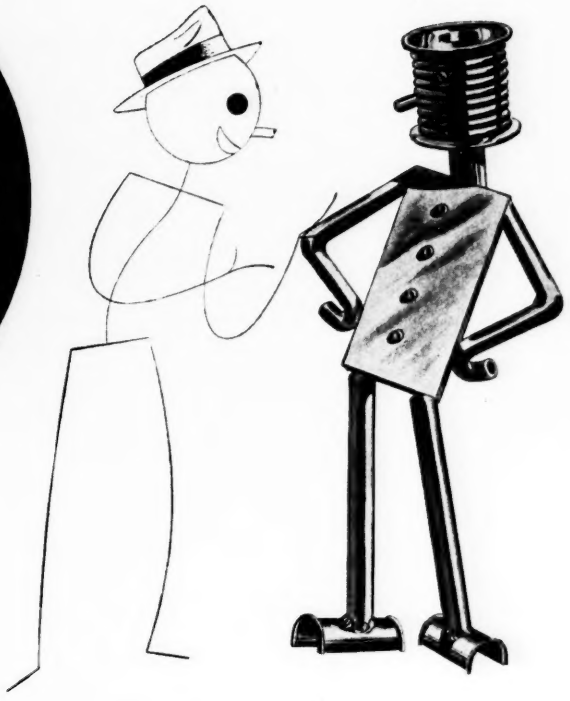
•

*If you contemplate a post-war plant, let us prepare for you a special brochure setting forth the economic advantages of Port Wentworth—all without obligation and in confidence.*

## PORT WENTWORTH CORPORATION

**New York—17 E. 42nd. St.** **Savannah—P. O. Box 1094**

WE HAVE THIS TO SAY ABOUT *Lead*



We urge you to look carefully at lead. It has performed some remarkable feats.

In glass, lead is transparent, invisible. In paints, lead as the pigment is opaque and colorful. In architecture, lead outlives the rise and fall of empires. In industry, it ignores the consuming fury of sulfuric acid. In science, it slaps back the stabbing rays of radium.

In any discussion of materials, lead carries weight!

But what of lead in the future? Versatile as lead has been, has it done all that it is capable of doing?

It is not as a metallic rival, with tongue in cheek, that we gesture toward the nether pole of specific gravity and ask whether you are earnestly thinking up more ways to use lead after the war.

It is as a sincere, practical-minded Imagineer. We hope—as one Imagineer to another.

It would be the wildest fancy to dream that wartime developments of any one material could solve postwar economic problems—much as we would like to picture our stronger, more versatile, more plentiful Alcoa Aluminum Alloys in the part.

We are imagineering—not daydreaming. We believe the more new uses Imagineers can think up for old materials, to make new things to sell, and, the more new materials Imagineers can apply to old uses, to make familiar things more salable—then the better off we'll all be.

In your Imagineering, you will certainly come face to face with the greater possibilities in Alcoa Aluminum. They alone are not enough to create the payrolls to keep fifty-five million workers in their buying roles—but they are a very encouraging field to imagineer in. Alcoa offers so much in lower costs, greater strengths and increased applications that engineering gets a shot of imagination. That starts *Imagineering!*

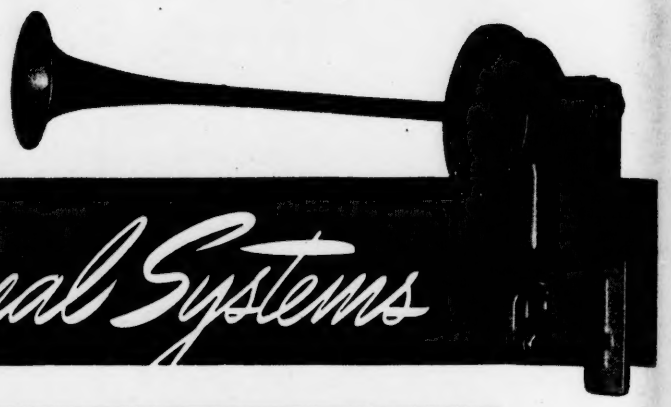
ALUMINUM COMPANY OF AMERICA, 2109 Gulf Building, Pittsburgh, Pennsylvania.

IMAGINEERING AT WORK

**Alcoa Aluminum**

ALCOA ALUMINUM

SCHWARZE FARADAY



# Modern Signal Systems

## 1. STREAMLINE YOUR PRODUCTION!

## 2. PROTECT YOUR PLANTS!

***Signals that get action!*** **That's what you want in your plant now,—that's what you will want when you swing back into peacetime production.**

***Installation quick and easy***

**There's a SCHWARZE-FARADAY Electrical Audible Signal for every industrial need. From their wide range of styles, and great variety of tone, you can select the signals to do YOUR job, —for warning, communication, shift change, fire alarm, etc. (Our signal engineers will analyze your problems if this service is desired.)**

***Maintenance problems are "out"***

**Many new industrial signals of most advanced design, developed by this pioneer manufacturer, are rendering valuable service in war plants today. Extra performance, EASIER INSTALLATION, less maintenance, positive dependability, are their outstanding qualities.**

Schwarze-Faraday Signals include Horns, Bells, Buzzers, Sirens, Air-Trumpets, Chimes, in wide variety of tone, size and style. For example:

**UNI-PACT BELL.**

Latest advancement in signal design. Special mounting features make this bell signal interchangeable with horns and Kodaires. Just "plug in".

**STANDARD HORN.**

One of many styles and shapes, which include megaphone, two-way, drum, short and flush. Supplied for either A.C. or D.C.; vibrating single-stroke types, etc.

**HEAVY-DUTY BUZZER.**

Chosen for signal work of vital importance on control equipment of U. S. Army and Navy. Many other types.

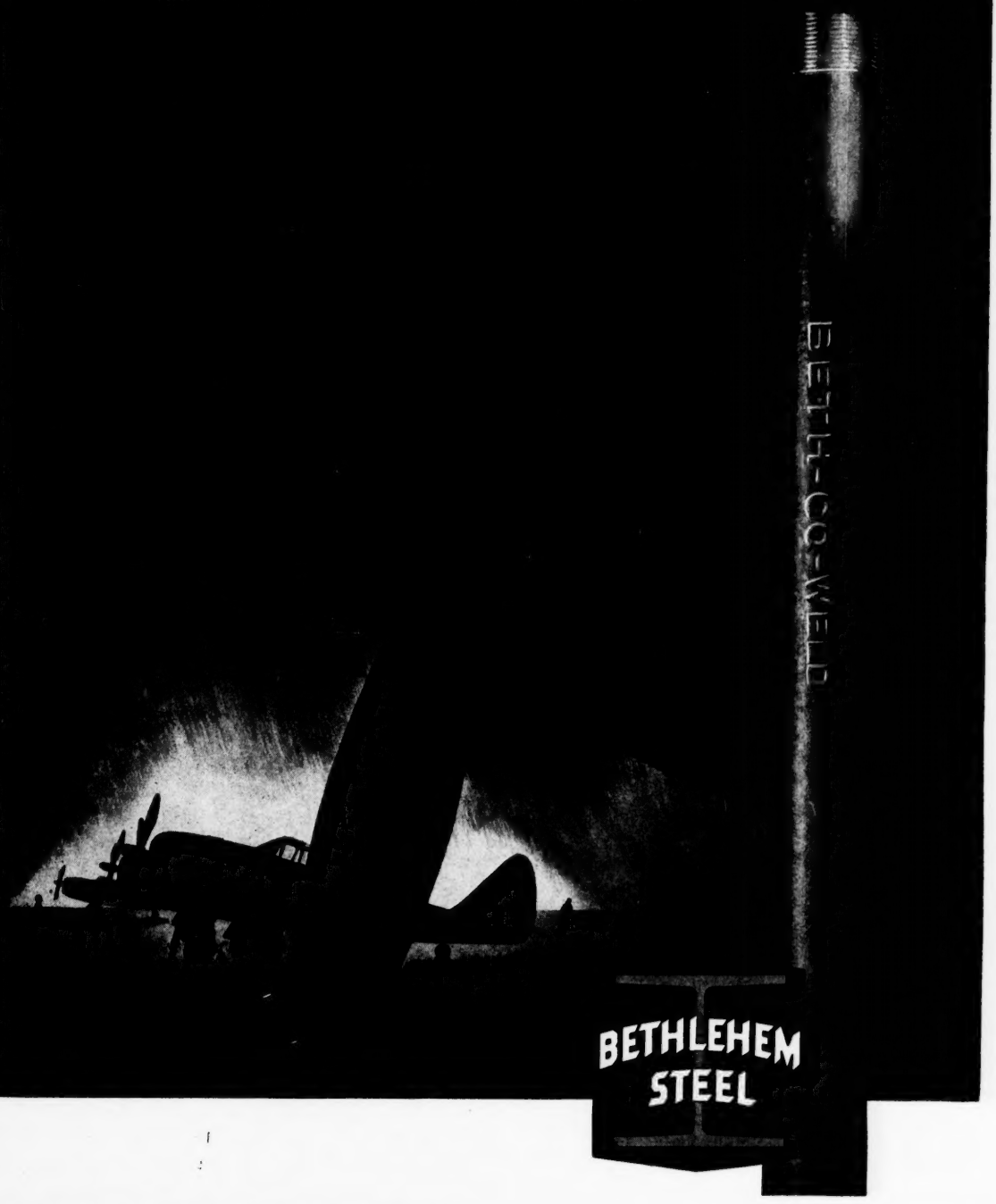
**COMPLETE ILLUSTRATED AND INDEXED CATALOG FREE ON REQUEST**

**SCHWARZE ELECTRIC COMPANY**

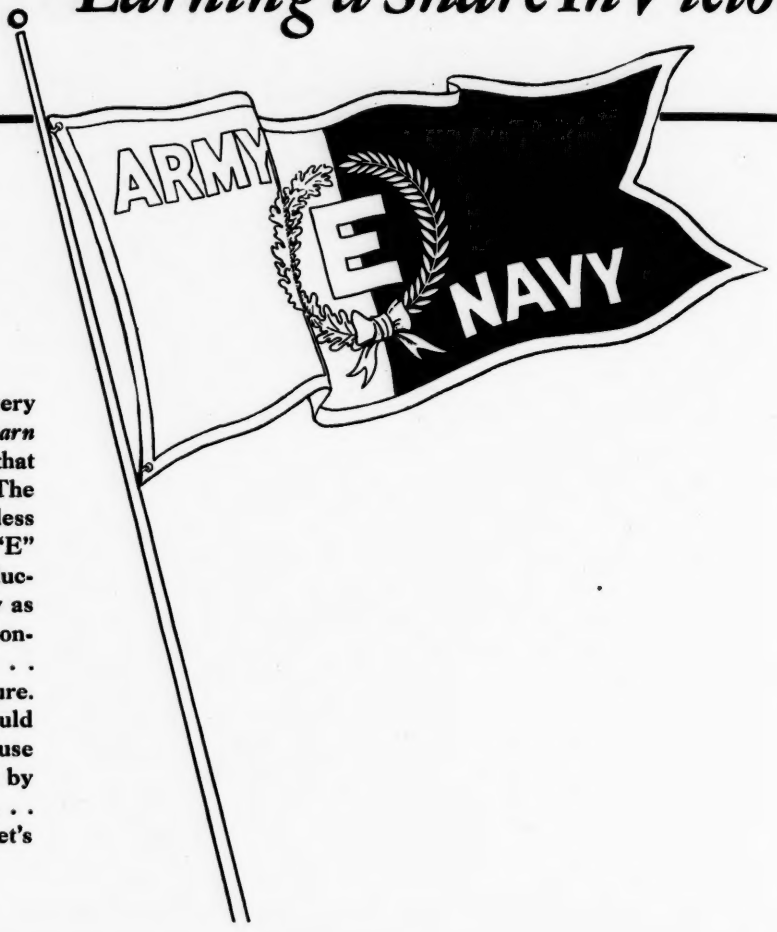
2109 CHURCH STREET • ADRIAN, MICHIGAN

# BETHLEHEM PIPE

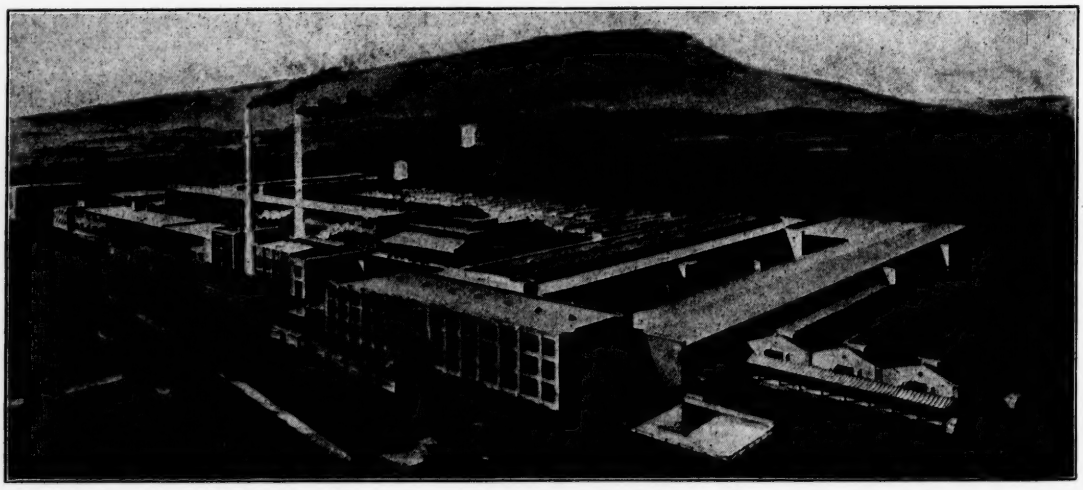
## brings aviation fuel to the front



# *Earning a Share In Victory*




★ Every American . . . every American concern . . . must *earn* a share in the great things that will come after victory. The men and women of Peerless point to our Army-Navy "E" pennant . . . awarded for production achievement . . . not only as a badge of merit for past contribution to the war effort . . . but as a pledge for the future. ★ Every private individual should participate in the general cause . . . both by war work . . . and by purchasing WAR BONDS . . . today, and every day! ★ Let's all *earn* a share in Victory!



## PEERLESS WOOLEN MILLS

ROSSVILLE, GEORGIA

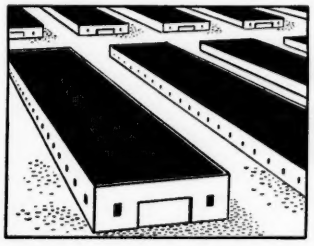
# BARRETT PITCH AND FELT NOW AVAILABLE FOR YOUR ROOFING, REROOFING AND ROOF MAINTENANCE NEEDS

The tremendous task of keeping America's production lines running smoothly presents serious problems to hard-pressed maintenance engineers. In order to help with these problems and to avoid costly shutdowns and damage to equipment due to roof failure, Barrett offers plant engineers the following time-saving and labor-saving suggestions:

**1.** Have your local Barrett Approved Roofer inspect the roofs of your plant at regular intervals. *It takes less time to prevent trouble than to repair it* . . . and roof troubles have a way of happening at the most inopportune times.

**2.** Engage the services of your Barrett Approved Roofer if repair and maintenance are advisable. His crew is well trained and knows how to correct roof ailments quickly and efficiently. Why take your own men away from production jobs for roof repairs when the Barrett Roofer can save you time and trouble?

If you're building a new plant or reconditioning warehouses or other buildings, use dependable roofing products. Barrett Pitch and Felt are non-critical and are readily available. Barrett Specification* Roofs have proved their ability to provide maximum trouble-free protection against weather and wear. Barrett Approved Roofers are ready to serve you — now.



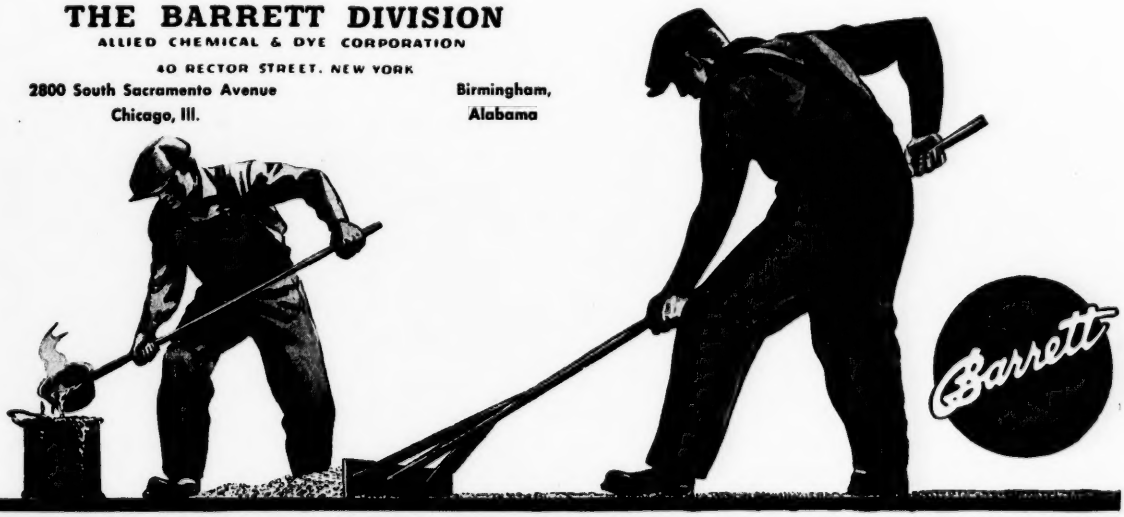
Barrett Roofs are serving conspicuously in the national war effort. On one storage and supply project alone, more than 300 carloads of Barrett Pitch and Felt were used for roofing and waterproofing.

The wise maintenance engineer will take advantage of the experience and know-how acquired by Barrett in 89 years of successful roofing experience.

•

Call on us, or your local Barrett Approved Roofer, for help on any roofing or waterproofing problem.

**THE BARRETT DIVISION**
ALLIED CHEMICAL & DYE CORPORATION
40 RECTOR STREET, NEW YORK
2800 South Sacramento Avenue, Chicago, Ill.
Birmingham, Alabama




BARRETT SPECIFICATION* ROOFS . . . BARRETT BUILT-UP ROOFS AND WATERPROOFINGS . . . SHINGLES AND SIDINGS . . . ROLL ROOFINGS . . . ROCK WOOL INSULATION . . . ROOF COATINGS AND PROTECTIVE PRODUCTS

*Trade-mark Reg. U. S. Pat. Off.

# Look, Son . . .

## *It's going by the window now!*

YES, look out of any train window on the Southern Railway System today and you'll see history in the making. A history so new, it may not be in the school books for years to come.

A history so modern, it's over-shadowed now by America's Number One job of winning the war.

But it's there—alive—ready to burst into all its glory when Peace comes to free men once again.

It's an efficient, carefully planned, manufacturing city . . . where a Southern village used to be.

It's a field of golden, sun-drenched grain . . . where scrub pine grew before.

It's a *new* power project . . . a *new* factory . . . a *new* research laboratory. It's a *new* product, a *new* machine, a *new* method.

It's the South, the growing Southland, served by the Southern Railway System . . . and geared to serve all America when our Victory has been won.

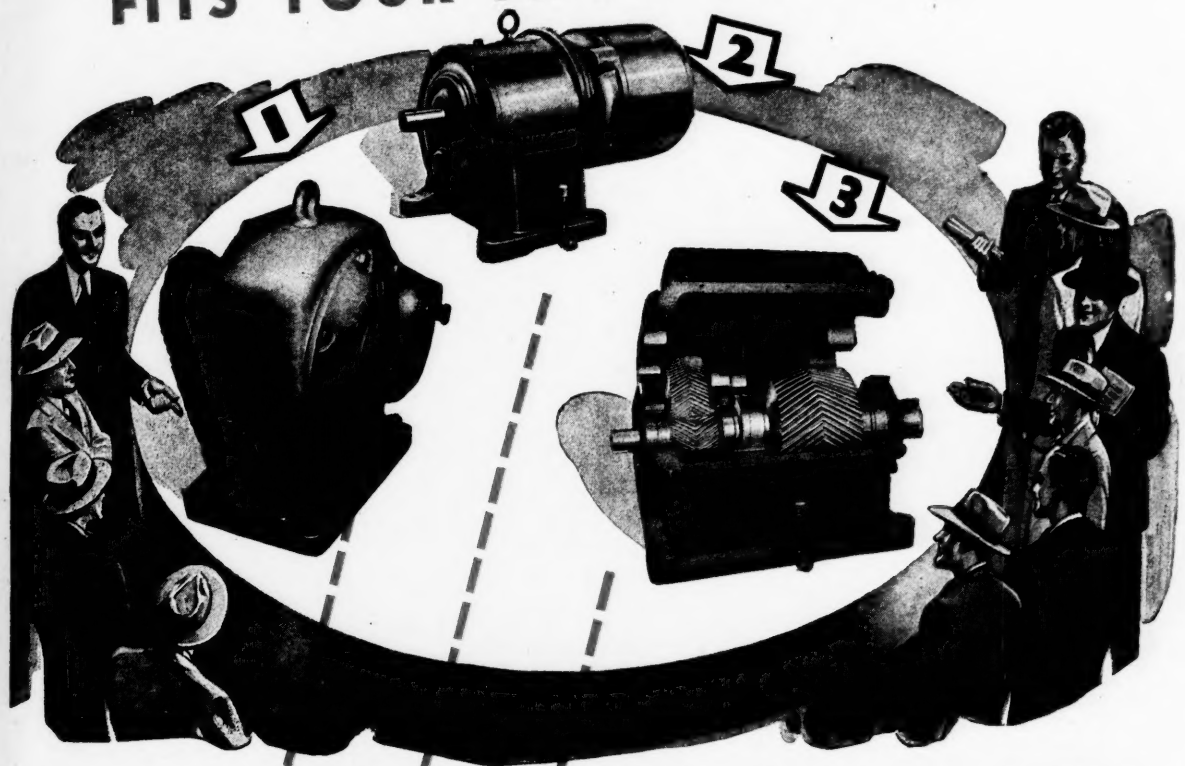
Ernest E. Norris
President

*"Look Ahead . . . Look South"*

**SOUTHERN RAILWAY SYSTEM**

**The Southern Serves the South**

# WHICH ONE FITS YOUR APPLICATION?




## *Come to SPEED REDUCER HEADQUARTERS and Get the Exact Size and Type You Need!*

**1 WORM GEAR REDUCERS**

For large ratios and flexibility of arrangement and where drives of right-angle type or other shaft combinations in single and double reductions are required. Horizontal and vertical types.

**2 MOTORIZED HELICAL GEAR REDUCERS**

Provide unusual compactness, simplicity and economy in first cost, with high efficiency and durability. Available in standard sizes, double and triple reduction types.

**3 HERRINGBONE GEAR REDUCERS**

Made for efficient high speed operation and ability to withstand shock loads, with quiet operation and complete protection against dust, dirt and fumes.

• The Link-Belt line includes herringbone gear, worm gear and motorized helical gear reducers in practically any ratio and size you may require. Think of the advantage to you in securing the unbiased recommendation of an organization that makes all types. Consult freely with Link-Belt on your particular problems; you will receive counsel and help that will assure top performance under your exact conditions.

9281-B

**LINK-BELT COMPANY**

Leading Manufacturer of
Mechanical Power Transmission Equipment

Philadelphia 40, Chicago 9, Indianapolis 6, Atlanta, Dallas 1, San Francisco 24, Pittsburgh 19, Cleveland 13, Detroit 4, Baltimore 1, Washington 5, D. C., Toronto 8. Offices, warehouses and distributors in principal cities.

**LINK-BELT SPEED REDUCERS**

# YOU WEAR 'EM DOWN
# I'LL BUILD 'EM UP!

Don't let the spare parts situation worry you. No matter how badly worn or damaged a part may be, put it back in service with arc welding. This is the kind of teamwork we'll have to use from now until the war is over.

Harcote's specialty is hard surfacing machinery parts, shovel teeth, scraper blades, farm implements — in fact, all kinds of applications on carbon steel, low alloy and high manganese surfaces. It makes parts last much longer than originally. Let Harcote save you time and money. Welding procedures on request.

The complete line of P&H Alloy Electrodes covers all needs for hard surfacing, resistance to wear, impact and abrasion, for welding stainless steels, 4-6% chrome steels, armor plate, etc.

**P&H**

P&H builds a complete line of A.C. and D.C. Welders — all with single control. All P&H machines are rated on W.S.R. which is actual delivered output.

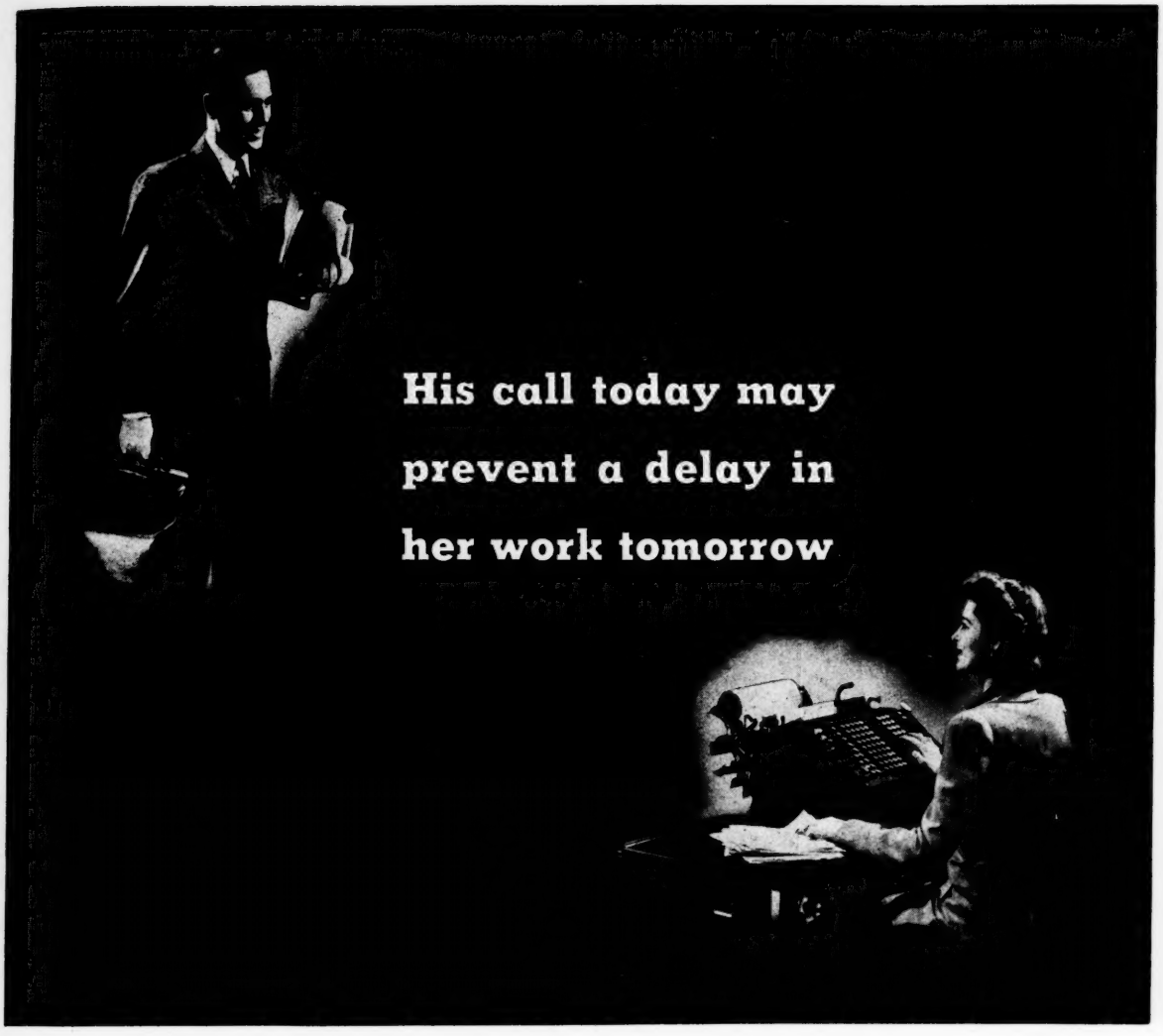
ARMY E NAVY

*A new star has been added to P&H's award for excellence in war production.*

*General Office.* 4427 W. National Avenue, Milwaukee, Wis.

**HARNISCHFEGER**
CORPORATION
WELDING ELECTRODES • MOTORS • HOISTS P&H ELECTRIC CRANES • ARC WELDERS • EXCAVATORS

*Canadian Distribution:* The Canadian Fairbanks-Morse Co., Ltd.




**MANUFACTURING FOR WAR**

Manufacture of aircraft equipment for the Army Air Forces, and the manufacture of Burroughs figuring and accounting equipment for the Army, Navy, U. S. Government and the nation's many war activities, are the vitally important tasks assigned to Burroughs in the Victory Program.

An ounce of prevention is still worth a pound of cure—especially these days when time and manpower are at a premium. A phone call will bring a Burroughs service man when you need him, but it's far wiser to arrange with Burroughs for periodic inspection, lubrication and adjustment of your Burroughs machines, so that emergencies, and the delays they entail, may be prevented. The Burroughs service man is the best answer to the ever-mounting problem: "How can I get the most out of my present machines, and make them last for the duration?" He is factory trained and factory controlled, and makes replacements with genuine Burroughs parts. His work is guaranteed by Burroughs. For full details, call the local Burroughs office.

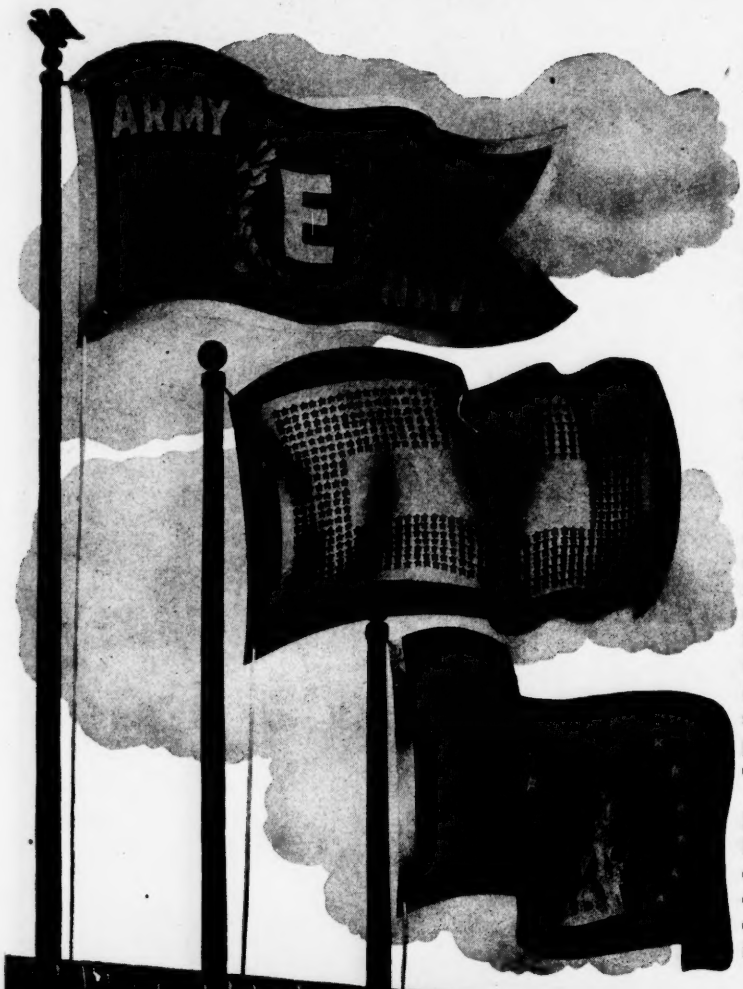
*BUY YOUR SUPPLIES FROM BURROUGHS—Users of all types of office machines find that Burroughs ribbons, carbon paper, roll paper and other supplies cost no more—assure better, more uniform results.*

BURROUGHS ADDING MACHINE COMPANY · DETROIT, MICHIGAN

# Burroughs

ADDING, CALCULATING, ACCOUNTING, STATISTICAL, PAYROLL AND BILLING MACHINES

# "AN OUTSTANDING CONTRIBUTION TO VICTORY"

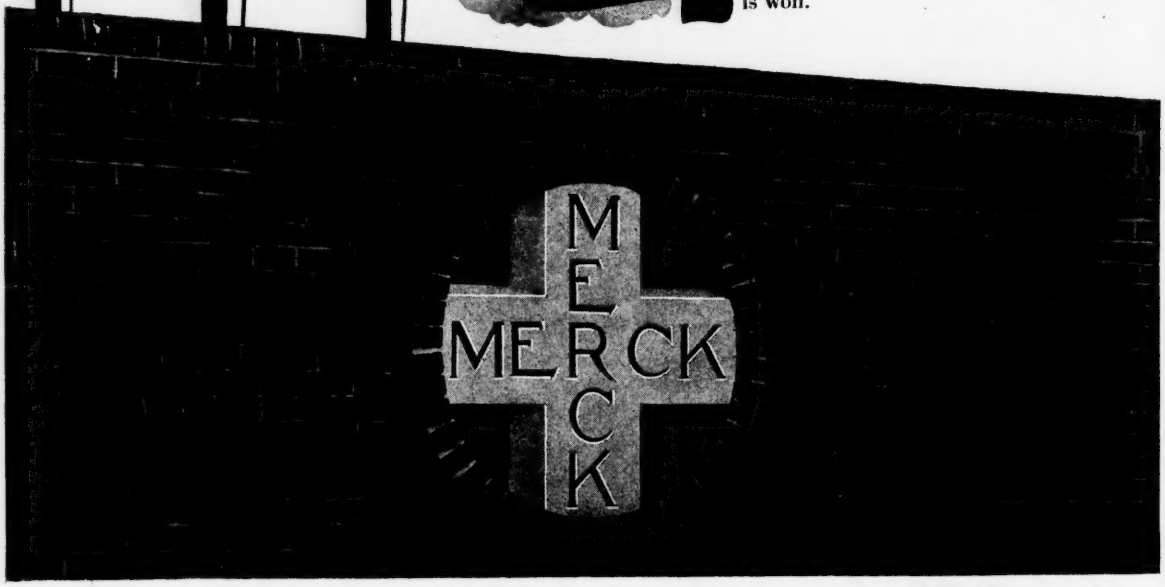



The men and women of Merck & Co., Inc. are proud to announce that *The Army-Navy Production Award* has been conferred upon them for "great work in the production of war equipment."

Symbolic of distinguished service to America, the Army-Navy "E" Flag now flies above our three plants—at Rahway, N. J., Philadelphia, Pa., and Elkton, Va.—and the "E" Pin has been presented to all our workers as evidence of the fact that they are making "an outstanding contribution to Victory."

The production of essential drugs and chemicals for America's Armed Forces and civilian population, and for those of the United Nations, demands the utmost in care, skill, accuracy, and craftsmanship. Scientific research, rigid analytical control, and greatly expanded manufacturing facilities—combined with *esprit de corps* and thorough cooperation between labor and management—have made it possible for us not only to meet the increasing demands of our Government for millions of finished products, but to supply the basic chemicals necessary for production by hundreds of other concerns in every branch of industry.

In accepting the award conferred upon us, we have joined together in assuring the officials of our Army and Navy that we will not relax our efforts, and that they can count on us for continued all-out production until this war is won.




**MERCK & CO., Inc.** *Manufacturing Chemists* **RAHWAY, N. J.**

**Philadelphia, Pa.** **Elkton, Va.**

★ ***Fine Chemicals for the Professions and Industry Since 1818*** ★

# 2 Ways
## TO USE A MONKEY WRENCH



**1** Tree-top low, an Allied fighter plane roars over Occupied France. Target . . . one of Hitler's supply trains. A blast from the plane's cannon . . . a well placed bomb! Below, another enemy train lies wrecked—another monkey wrench has been thrown into the machinery of Hitler's tottering railroads.

Flying Fortresses . . . high over Germany. "On course . . . On target . . . Steady . . . STEADY . . . BOMBS AWAY!" Far below, bombs crash on railroad shops and yards of a vital Nazi transportation center. Another monkey wrench has been hurled into the most vulnerable cog in Germany's war machine. This is one way to use a monkey wrench.

**2** The emphasis the Allied High Command places on destruction of Axis railroads, underlines the importance of America's railroads to our own war effort.

Here at home on the American railroads, the monkey wrench plays a different role — a vitally constructive role.

Last year, Norfolk and Western's busy shops made heavy repairs to 4,734 coal cars, built 17 locomotives, repaired 43 locomotives for other railroads, and completed 33 orders of war equipment for war industries, and the U. S. Army and Navy . . . plus maintaining its equipment at a high standard.

This way of wielding the monkey wrench provides the transportation that is vital to the production of American planes which are hurling monkey wrenches of destruction from the skies over Europe to blast Hitler's twisted dreams.

On American Railroads
EVERY FOUR SECONDS a new freight train is started off
EVERY SIX MINUTES a new troop train pulls out—
*Headed for Victory*

# NORFOLK and WESTERN *Railway*

ONE OF AMERICA'S RAILROADS . . . *All* UNITED FOR VICTORY!

BUY MORE WAR BONDS

They're "All O
GREAT DANE Trailer
U.S.A.
55297

ARMY E NAVY

"FOR ACHIEVING TODAY WHAT YESTERDAY SEEMED IMPOSSIBLE"

The STEEL PRODUCTS CO., Inc.

SAVANNAH . . GEORGIA

# Woods and Mershon Machines

As Built By

## S. A. Woods Machine Company

For

## Post War Deliveries

Forward looking manufacturers are now preparing to meet the enormous demand for Forest Products in the Post War Era. New manufacturing methods—new items of manufacture—new equipment (standard or special, or for much needed replacements) are all part of the future picture.

What are you doing to be prepared BEFORE HAND? Are you, in common with the forward looking companies, planning, and placing orders now for future deliveries?

*We are accepting orders for post war deliveries on Woods and Mershon Machines. Let us consult with you on your anticipated requirements.*

**S. A. WOODS MACHINE CO. - W. B. MERSHON CORP.**

**30 Federal Street, Boston, 10, Mass.**

# TO A SOUTHERN ALUMINUM PLANT

## FOR *Faster* WARTIME PRODUCTION

AMONG the more important cargoes carried by today's railroads are welded steel pressure vessels . . . bound for America's industries. Pressure vessels are utilized to solve various storage and handling problems in the production of aluminum, butyl, rubber and many other products essential to the war effort.

The designing and fabricating of all types of pressure vessels for numerous industries has long been a specialty at our plants. If specifications call for x-raying or stress relieving, our Birmingham plant has complete facilities for meeting these requirements. Vessels up to 13 ft. 2 in. in diameter and as long as can be shipped can be handled in the stress-relieving furnace.

Our experience and knowledge gained during years of producing welded steel pressure vessels to meet specific problems . . . is available to today's industries. Your inquiry is invited.

*The horizontal digester shown is one of 18 such vessels measuring 9 ft. 3 in. in diam. and 35 ft. long, fabricated at our Birmingham plant, for installation at an aluminum plant in the South. It is designed for 200 lbs. per sq. in. pressure.*

ARMY (E) NAVY

*Awarded to our shipyard at Seneca, Ill. and dry dock yards at Eureka, Calif. and Newburgh, N. Y.*

# CHICAGO BRIDGE & IRON COMPANY

Birmingham 1 .....1530 North Fiftieth Street
Houston 1 .....5614 Clinton Drive
Tulsa 3 .....1611 Hunt Building
New York 6 .....3313-165 Broadway Building
Cleveland 15 .....2216 Guildhall Building
Chicago 4 .....2106 McCormick Building
San Francisco 5 .....1040 Rialto Building
Philadelphia 3..1619-1700 Walnut Street Building
Havana .....402 Edificio Abreu
Washington 5 .....330 Bowen Building

Plants in BIRMINGHAM, CHICAGO and GREENVILLE, PENNSYLVANIA

# PROUDLY IT WAVES

★★★★★

## WE *ACKNOWLEDGE*

*with pride the recognition of our achievements in . .*

## WAR PRODUCTION....

## *The* MARITIME "M" PENNANT *and the* VICTORY FLEET FLAG

Uninterrupted production of steam steering engines for Liberty cargo ships . . . that's our job. A job to which every employee has applied himself, without exception, for the past year. We are proud of the diligence shown by our workmen in producing machinery so vital to the launching of a fleet of Liberty ships . . . for ships necessary to the winning of this war . . . necessary to the preservation of Democracy and the Four Freedoms.

The Maritime Commission has seen fit to honor our "outstanding production achievement". We shall proudly fly our "M" pennant and Victory Fleet flag—and wear our Merit badges with a deep sense of duty to produce more and more, faster and faster, the equipment that helps make the ships that will speed the day of Victory.

As Americans worthy of brotherhood with our heroic men who are fighting on every front—we cannot, we must not, we dare not do less!

**We realize that many of our old customers are also producing items vital to the war effort. If we can serve them in any way—without interruption to our own production program we will be most happy to do so, and respectfully solicit their inquiries.**

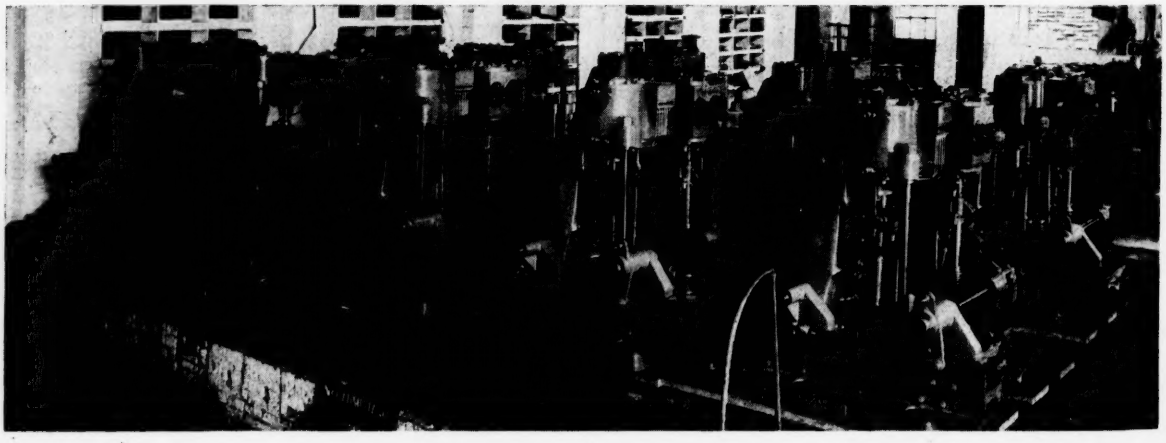
## GOLDENS' FOUNDRY & MACHINE COMPANY

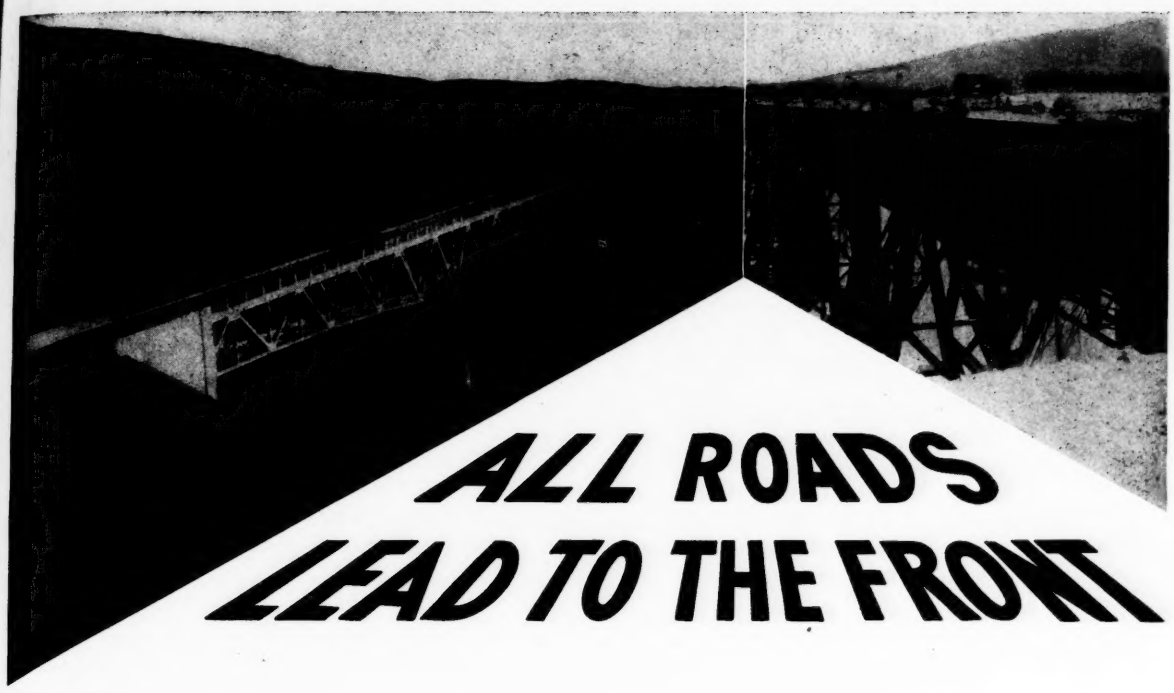
POWER TRANSMISSION MACHINERY
BALL BEARING APPLICATIONS

COLUMBUS — GEORGIA

V-BELT SHEAVES & DRIVES
GREY IRON CASTINGS

**Starboard side view of ten completed engines for United States Maritime Commission**





# ALL ROADS LEAD TO THE FRONT

HOWEVER PEACEFUL in appearance, it must be remembered that today all roads lead to the fighting fronts of the world. Over the railways and highways of America is flowing in tremendous volume the life-blood of the United Nations' war strength—in troops, equipment, food and all the materials essential to victory.

How fortunate that long-range planning and a far-sighted engineering program during peace prepared so many of these roads for today's terrible emergency. This, together with hard work and efficient coordination of operations by management, has made possible the amazing performance of our railroads in carrying passenger and freight traffic nearly double that of pre-war days.

An important feature in the war-time usefulness of these roads are the modern steel bridges, of every type and design, which carry them clear of delaying barriers. VIRGINIA BRIDGE is glad to have had such a large part in the building of these structures, and we look forward to the time of peace when all our resources can again serve roads that lead not to battle fronts.

**Virginia Bridge Company**

(South's Largest Structural Steel Fabricator)

**STEEL STRUCTURES**
**All Types**

Plants: ROANOKE, VIRGINIA
BIRMINGHAM, ALABAMA
MEMPHIS, TENNESSEE

ROANOKE BIRMINGHAM ATLANTA MEMPHIS NEW YORK DALLAS

UNITED STATES STEEL

# 7 things you should do to keep prices down!

If prices soar, this war will last longer, and we could all go broke when it's over. Uncle Sam is fighting hard to keep prices *down*. But he can't do it alone. It's up to *you* to battle against any and every rising price! To help win the war and keep it from being a hollow victory afterward—you must *keep prices down*. And here's how you can do it:

## 1. BUY ONLY WHAT YOU NEED

Don't buy a *thing* unless you *cannot* get along without it. Spending can't create more goods. It makes them scarce and prices go up. So make everything you own last longer. "Use it up, wear it out, make it do, or do without."

## 2. PAY NO MORE THAN CEILING PRICES

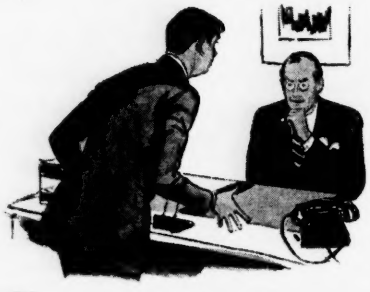
If you do pay more, you're party to a black market that boosts prices. And if prices go up through the ceiling, your money will be worth less. Buy rationed goods only with stamps.

## 3. SUPPORT HIGHER TAXES

It's easier and cheaper to pay for the war as you go. And it's better to pay big taxes *now*—while you have the extra money to do it. Every dollar put into taxes means a dollar less to bid for scarce goods and boost prices.

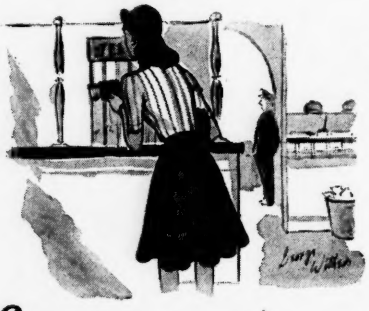
## 4. PAY OFF OLD DEBTS

Paid-off debts make you independent now . . . and make your position a whale of a lot safer against the day you may be earning less. So pay off every cent you owe—and avoid making new debts as you'd avoid heiling Hitler!



## 5. DON'T ASK MORE MONEY

in wages, or in prices for goods you have to sell. That puts prices up for the things all of us buy. We're all in this war together—business men, farmers and workers. Increases come out of everybody's pocket—including *yours*.



## 6. SAVE FOR THE FUTURE

Money in the savings bank will come in handy for emergencies. And money in life insurance protects your family, protects you in old age. See that you're ready to meet any situation.

## 7. BUY WAR BONDS

and hold them. Buy as many as you can. Then cut corners to buy more. Bonds put money to work fighting the war instead of letting it shove up prices. They mean safety for you tomorrow. And they'll help keep prices down today.

## KEEP PRICES DOWN . . .

*Use it up . . . Wear it out . . .*

*Make it do . . . Or do without.*

This advertisement, prepared by the War Advertising Council, is contributed by this magazine in cooperation with the Magazine Publishers of America.

# Fall Roundup in Dixie

DOWN in Alabama, the "dogies" are on the move. Thousands of them . . . headed for the feedlots of the South, the East and the North.

The same thing is happening in six other states of the South and Southeast. Every fall, beef calves from the pasture ranges are rounded up for marketing as "feeders," and shipped out to be "finished" on corn.

They finish well, these Southern feeder calves, because they get off to the right kind of start on lush pasture lands, unsurpassed in the nation; and because they are good cattle—many of them purebred.

Not always have the pastures of the South competed thus successfully with the plains of the West. Time was when most Southern cattlemen shipped in their feeder calves from distant states. And it was not until 1939 that the first organized feeder sales took place in the South.

The 1939 sales, held in the famous black-soil belt of Alabama, were arranged and sponsored by the Tennessee Coal, Iron and Railroad Company in cooperation with the Agricultural Extension Service. Buyers brought in by the company's Farm Products Department have increased in number each succeeding year, and the Black Belt now sells over 100,000 feeder cattle annually.

Since 1939, T.C.I. Farm Products Agents have helped to establish annual feeder sales in Georgia, Tennessee, North Carolina, South Carolina, Mississippi and Louisiana.

With improved markets, Southern beef calves have steadily improved in quality. Buyers get animals that "finish" faster and better. And Southern farmers get the money that the buyers used to spend elsewhere.

T.C.I. Farm Products Agents are finding many ways to help the Southern farmer. They know that whatever benefits the farmer, helps to build prosperity and buying power for the whole great South.

**U·S·S Steel Products manufactured in our mills include:**

- Rolled, forged and drawn steel products.
- Structural shapes, plates, bars, small shapes, agricultural shapes, tool steel, strip, hoops, cotton ties.
- Black, galvanized and special finish sheets.
- Wire and wire products.
- Reinforcing bars.
- Rails, track accessories, axles and forgings.
- Culverts, Panelbilt prefabricated steel buildings, cold-formed steel sections.
- U-S-S High Tensile Steels and U-S-S Abrasion-Resisting Steels.
- Semi-finished products, pig iron and ferromanganese.

**TENNESSEE COAL, IRON & RAILROAD COMPANY**

*Birmingham, Alabama*

Awarded to manufacturing divisions of Ensley, Fairfield and Bessemer Works

**UNITED STATES STEEL**

# NATURAL GAS

A fuel whose value has been proven by years of use in a most diversified line of industrial applications.

Natural gas has created the possibility of effortless comfort by the facility, and economy with which it fits into the home.

**SOUTHERN NATURAL GAS COMPANY**

**Watts Building** **Birmingham, Ala.**



# Boost War Production

**with your present labor force . . . by using**
**DELTA POWER-FEED DRILL PRESSES**

It doesn't cost a fortune or entail a long delay for retooling. Standard low-cost Deltas, used in hundreds of war plants, give quick relief from production "jams." Speedy operation saves time, power feed works automatically while operator loads another jig or works on another spindle — adding to output, cutting costs.

These are thoroughly engineered, substantially built, good-looking machines, made in a modern machine-tool plant. Advanced design combines best features of machines of this type. Safe, dependable, performance quickly pays for the machines and confirms your good judgment in installing them.

Your Delta distributor can show you ample evidence in your vicinity. Ask him about priorities and deliveries. M-3E

*Mail the coupon for new Delta catalog.*

## DELTA FEATURES

**1.** Worm-driven power feed operates directly off motor — giving 8 *rates of feed for each spindle speed.*

**2.** One swift hand motion brings drill down to work—flip of power lever starts power feed.

**3.** Automatic stop holds depth of holes to close tolerances; spindle returns automatically.

**4.** *Instant* switching from heavy power-feed operations to sensitive hand drilling.

*Tear out this coupon, mail today*

THE DELTA MANUFACTURING CO.
706K E. Vienna Ave., Milwaukee 1, Wis.

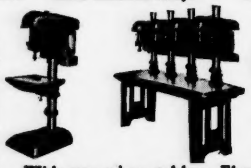
Please send me your new catalog giving full details on Delta Power-Feed Drill Presses and your full line of low-cost machine tools.

Name_____Position_____

Company_____

Address_____

City_____State_____



With one-piece tables: Floor and bench types, single spindle; floor type, 2- and 4-spindle. With sectional tables: Floor type, 3-, 4-, 5-, 6-, and 8-spindle. Slo-Speed or High-Speed No. 2 Morse Taper or ½" Jacobs Chuck spindle.

DELTA
MILWAUKEE
Machine Tools

# THE PROBLEM OF SUPPLIES INCREASES

## —SINCE ★ AFRICA HAS FALLEN

## ★ SICILY HAS FALLEN

## AND *NOW*

# ITALY

*AS THE PROBLEM OF EFFICIENT, RAPID MOVEMENT OF SUPPLIES INCREASES, THE TREMENDOUS HELP OF MODERN AIDS IN MATERIAL HANDLING SUCH AS THOSE CONTRIBUTED BY CLARK FORK TRUCKS PLAY A MORE VITAL ROLE IN SPEEDING VICTORY*

BUY WAR BONDS

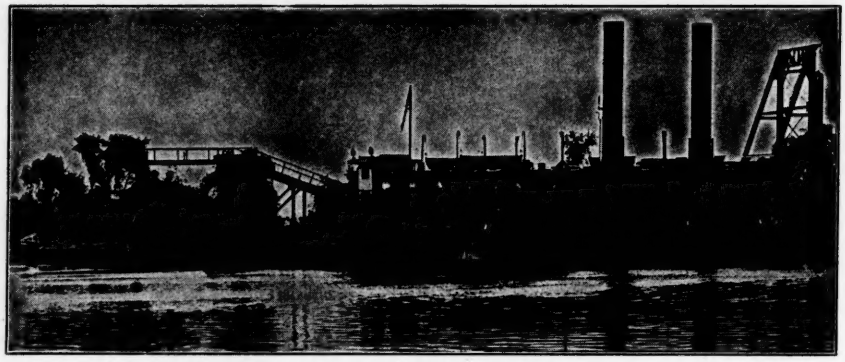
## CLARK TRUCTRACTOR

DIVISION OF CLARK EQUIPMENT COMPANY

BATTLE CREEK, MICHIGAN, U.S.A.

# DREDGING

**FILLING, LAND RECLAMATION, CANALS, PORT WORKS**
**RIVER AND HARBOR IMPROVEMENTS—DEEP WATERWAYS AND SHIP CHANNELS**

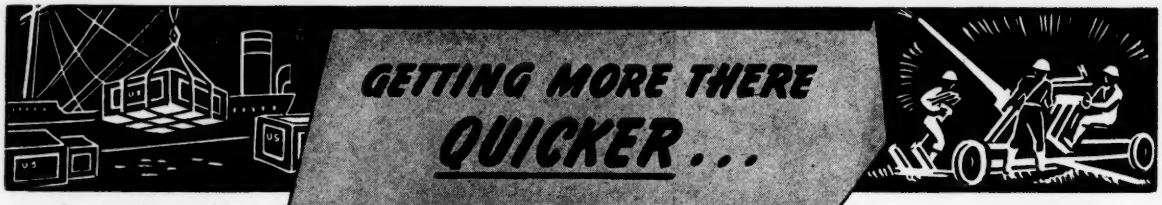


We are especially equipped to execute all kinds of dredging,
reclamation and port works in Southern waters.
Correspondence invited from corporate and private interests everywhere.

*Contractors to the Federal Government*

## ATLANTIC GULF AND PACIFIC CO.

15 Park Row, NEW YORK 7 Citizens State Bank Bldg., HOUSTON 2, TEXAS




★ ★ ★

**GUN BARREL PRODUCTION**

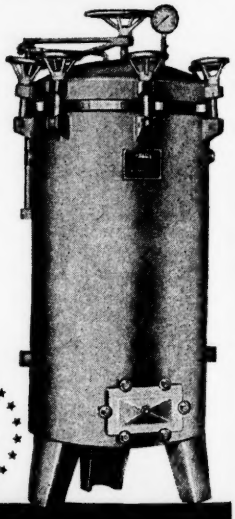
- ★ INCREASED FROM 6-30 PER DAY TO A STEADY 90
- ★ 2 LARGE HONING MACHINES RELEASED FOR OTHER OPERATIONS . .
- ★ FINISHED HONING OPERATIONS
- ★ REDUCED FROM 30% TO 1% . . . .
- ★ MAN POWER SAVED . . . .

BOWSER

Guns . . . and more guns, tanks, planes, boats! That's what our fighters over there need from us over here to hasten the day of "unconditional surrender". Speaking of guns, here is the true experience of a producer of gun barrels. Production ran from an uncertain six to thirty per day . . . Many of the broached barrels required further honing . . . some scratched so badly that they were rejected. Installing larger machine sumps . . . use of other type filters were tried but without success. A Bowser broaching oil filtration system was installed . . . eliminating the need for three men yet with the accompanying benefits shown at left.

If you have a cutting, broaching, grinding, honing, threading or other similar problem, call in a Bowser man. Perhaps he can help you to get more over there . . . quicker!

**S. F. BOWSER AND COMPANY, INC.**
FORT WAYNE, INDIANA



ARMY E NAVY Buy WAR BONDS and STAMPS

**LIQUID CONTROL SPECIALISTS - SINCE 1885**

METERING · DISPENSING · STORING · LUBRICATING · FILTERING · DISTILLING

# *Before peace comes—*

## CONSIDER THESE FACTS

**1. MANY AMERICAN MANUFACTURERS** will be able to resume the production of civilian goods before war ends.

**2. THE LARGEST DOMESTIC AND FOREIGN MARKETS** in history are already crying to be supplied.

**3. NOW IS THE TIME** for realistic enterprises to armor themselves with the factors of production that will enable them to hold their own in the world-wide competition for markets that can be won—at home and abroad—only by the lowest cost goods.

**4. LOCATION IS THE MOST CONTROLLABLE FACTOR** in the cost of production—and many of the large concentrations of yesterday's industry are going to have to decentralize or wage a losing fight to the smaller units that can serve regional markets more economically.

**5. THE CHARLESTON AREA WILL PROVIDE** (1) A daily supply of 300,000,000 gallons of INDUSTRIAL WATER; (2) Large blocks of low-cost ELECTRIC POWER; (3) Thousands of MODERN HOUSING units; (4) NEW PORT FACILITIES including docks and ocean freight handling equipment; (5) Thousands of native WORKERS, skilled and unskilled.

## HAVE YOU THOUGHT ABOUT YOUR BUSINESS IN THESE TERMS?

**Are you prepared to protect even your domestic distribution under global concepts, when the markets of all nations become the selling arenas for the low-cost producers of every country?**

**Being "all-out" in war production is excuse enough to do nothing about this; and it will be safe—if nobody else in your line *makes* the time *now* to chart his course into the new future. Whoever does this will make it neither safe nor easy for those who do not.**

No one locality can be the best place for every enterprise. But to some lines of business a location served by the Port of Charleston can offer factors that will maintain competitive superiority for domestic and foreign markets. We are ready to help you analyze these factors in relation to your business under the guidance of a recognized authority on industrial economics. If the answer is favorable to your business and ours, this County will welcome you with a reliable cooperation that will begin with the concept of location and continue throughout the years of operation.

Charleston County may not be your briar-patch. But if it should be—will you or your competitor find it first?

*All inquiries and studies are confidential.*

CHARLESTON INDUSTRIAL BUREAU

50 Broad Street

CHARLESTON 3, SOUTH CAROLINA

# YOUR PAYROLL DEDUCTIO
# IN A FLASH

WEEKLY . . . BI-WEEKLY . . . MISCELLANEOUS
See Other Side
WAGES
BLACK: Weekly
RED: Bi-Weekly
GREEN: Miscellaneous
NUMBER
DEDUCT
DIRECTIONS
Classifying Employees: Set the number of dependents in window opposite status number of employee by using lever. The classification of the employee will then appear in the window of the lever. Put this classification on your payroll record and use for future payroll calculations.
Ascertaining Payroll Deduction: Move lever so that employee's classification falls within the lever window. Turn outer disc until the wage range of the employee appears in one of the windows at the top, using the black figures for weekly payroll, red for bi-weekly and green for daily or miscellaneous payroll. The amount to be deducted will then appear in the window below.
MARITAL STATU
Married person cla of personal exemp
Married person cla of personal ex
Single perso
Married per of personal ex
Head of family with dependents.
Head of family with dependents.
GEORGE S. MAY COMPANY
DEDUCT-O-GRAPH
FOOLPROOF and AUTOMATIC
For Ascertaining Pay-as-You-Go Tax Deductions
Under Simplified Method
2600 NORTH SHORE AVENUE • CHICAGO
Business Engineering
MONTREAL • WASHINGTON • CHICAGO • NEW YORK • TORONTO • SAN FRANCISCO
CLASSIFICATION
LEVER
PATENT APPLIED FOR

★ *Set the lever to fit employees' status . . . a turn of the dial tells you how much tax to deduct. Every payroll desk should have one. A request on your company letterhead will bring yours free of charge.*

BUY MORE WAR BONDS

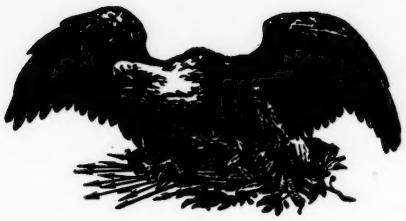
*end Money to Make Money"*

## GEORGE S. MAY COMPANY

NEW YORK — 2600 North Shore Ave., CHICAGO — ATLANTA

WASHINGTON, D.C. — CANADA: Toronto • Montreal — SAN FRANCISCO

*OFFICES IN PRINCIPAL CITIES*



# WHAT ENRICHES THE SOUTH ENRICHES THE NATION

A GUEST EDITORIAL

*By*

COL. JOHN CALLAN O'LAUGHLIN

*Editor and Publisher of Army and Navy Journal*

For more than the normal span of man's life, the MANUFACTURERS RECORD has striven intelligently and persistently to promote the industrial and agricultural well being of the South, and thereby increase the wealth and strengthen the sinews of the Nation. It should be proud of the part it has played in the miraculous development that has occurred before and during this period of war, and is in prospect when peace shall come again.

For years after the war between the States, the South was poverty stricken, much of its territory was in waste, and its manpower was reduced. It further suffered the burdens caused by self-seeking politicians and racial fanatics. Inspired, however, by the true American spirit, it grappled gallantly with its problems, and today its progress compares in dignity and achievement with that of the other regions of the country.

The intelligent and ambitious young men of the South, who formerly answered the call of opportunity in the North or West, have come to realize that the prospects for them are just as shining at home. The proof of this truth is found in the thousands of individuals and industries emigrating to and establishing themselves in larger number below the Mason-Dixon Line, and by their brains, capital and spirit of pioneering, adding to the wealth of their new homeland.

The MANUFACTURERS RECORD realized as far back as 1882 that the South was not merely an agricultural district dependent for the most part upon one crop, which the world knows as King Cotton. From that year it cried attention to the fact that its rich natural resources must be exploited for local as well as national benefit, and that in the interest of general prosperity they should be harnessed to industry. Joining in this campaign were the patriotic newspapers, and business and other leaders in the South. As a result these resources have been utilized and are being further developed, and the economic progress achieved has not only strengthened the South, but strengthened the entire Nation.

The natural advantages of the South caused it to be selected for the station and training of several millions of our boys and young men called into the Armed Services. The magnificent job it is doing in taking care of them is deserving of the enthusiastic praise being showered upon it. From Maryland and Virginia to the Gulf, the Flag flies over barracks and camps and marching men. The generous treatment accorded them is making them missionaries of good will which will prove of great value to the South when peace returns. Besides looking after the troops, the South has participated in the industrial miracle which has made the Nation, as Prime Minister Winston Churchill said, the most powerful in the world. The story of its achievements revealed by even a brief glance at the pages that follow, should make every Southerner, indeed every American, thrill with pride.

*The Army and Navy Journal* considers it a privilege and pleasure to compliment the MANUFACTURERS RECORD, and through it the entire South, on the issue containing this statement, which sets forth the ways and means by which the possibilities of this great section of our country have been made realities.

# Criminal Responsibility

We are at war with the German people fighting under the leadership of a government which they approve.

We should insist upon terms of unconditional surrender from that same government so that the German people will realize deeply and completely that they were misguided and misled. That government must be shown to its own people as the cause and reason for their trials and tribulations.

"For they that take the sword shall perish with the sword." (Mathew-26-52.)

After the last war peace was made with a so-called new German democracy while the war leaders escaped or drifted into temporary oblivion. This course placed the onus of making a defeated nation's peace on the shoulders of a new born democracy. It made democracy a word of opprobrium to every German. It started democracy off in Germany, to express it in baseball parlance, with two strikes on it. This must not happen again.

The last war was ended prematurely so that Great Britain and France would not be compelled to acknowledge at the peace table that it was won by American aggressiveness. The allied diplomats played upon our President's humanitarian instincts in order to accomplish this result.

Today there are many signs and portents that Germany will attempt to make peace with the United Nations on almost any terms that will be enforced by the United Nations as a group. She remembers one example of American-Anglo leniency and she is in desperate fear of Russian retribution.

Twice within a generation Germany has plunged the civilized world into a global war. Twice the world has seen the workings of the Germanic mind that is based on the iron heel of brutality.

This war must not be ended for soft hearted reasons. The peace must not be made by mush-minded idealists. The Prussian junker idea must be expunged from Germany once and for all or the German empire must be dismembered. The burden for accepting the blame for the condition to which a defeated Germany will be subjected must be made clear to every man, woman and child within the Reich. It must be placed squarely upon the shoulders of the Nazi schemers and the military regime who made Nazi accession to power possible. When that is done the tree of democracy will eventually bear fruit.

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# Sincerity

"It is not given to the cleverest and the most calculating of mortals to know with certainty what is their interest, yet it is given to quite a lot of simple folk to know every day what is their duty."

—Winston Churchill
Quebec Speech

# Pincer Movements

According to reliable estimates the federal government owns or has financial control over more than one-fifth of the wealth producing properties and their facilities in this country.

It is a known fact that the federal government employs more than three million appointed job holders and that these job holders have myriads of relatives and friends who are interested in seeing that these jobs are perpetuated.

It is a known fact that even before the war the federal government spent the public's money and wasted its credit in amounts that were nothing short of astronomical. It spent a large part of this money to experiment with socialistic schemes that would have made even Karl Marx laugh up his sleeve.

It is a known fact that the federal administration has pandered to the economic and social organizations that can, or claim that they can, deliver mass votes. It makes no difference to it if these organizations represent labor, city political gangs or groups fostering class or race hatred.

To any impartial citizen who thinks and is interested unselfishly in the United States of America it appears that the political strategists, (and we apologize to the Army and Navy for the use of that word), have conceived and are developing a three pronged pincer movement that is aimed to envelop and capture the economic structure of our country. This "putsch" has been greatly accelerated by use of the smoke screen of war.

This pincer is made up of the following attacking forces: (1) Gradual acquisition or control of the assets of the nation by the federal government; (2) exorbitant taxation on every man or business necessary to meet even the interest on the public debt and to support government parasites, with no reserve left to private industry; and (3) the shock troops of selfish people who are leaders of groups of voters or thoughtless followers in these groups. The objective of this pincer movement can be stated in two words "National Socialism." Beautiful word paintings by tiny men can not change this picture. Nationalsozialistische Deutsche Arbeiter Partei is the meaning of the word "Nazi." This is not a pretty economic picture to look at. Dunkerque was not a pretty picture for the British to see. The pincers of the German army worked at Dunkerque and it was only the tenacity of freedom loving people that has enabled them, like the phoenix, to rise from the ashes and fly the skies toward victory.

To men in this country who believe that they have in themselves a little spark from God that makes them men, the picture is not too gruesome. It is an exhilarating challenge to their manhood, to the force inherent in their characters and to the exertion of that force for the good of the nation and the ultimate escape from slavery of all mankind.

# Willie

We all know the old story about the proud mother who saw her son marching in a military parade and made the remark to a friend: "Everybody is out of step but Willie."

Maybe Willie was not out of step. Maybe her son was the only one in that company who knew that the beat of the music to which he marched was supposed to be taken on the left foot instead of the right one. Maybe Mother was right.

Maybe Willie was not playing up to his Mother or to the grandstand. He may have known that he was right and stuck to it. He certainly was not courting the favor of his superiors. Quite the opposite. He may have been doing what he knew was right with no thought of self and no thought of the personal consequences that might result. He may have been demonstrating an opinion in which he believed in spite of the mass disapproval of his associates and the authorities who commanded them. Willie may have been the kind of boy who would not sacrifice principle for expediency or personal gain.

Christopher Columbus thought that the world was round. No one else in his time agreed with him. Columbus was out of step with his times, but he was right.

Socrates drank hemlock and removed himself from the Athenian city of thought. Everyone knows the name "Socrates." How many can mention the name of one man of the many who were responsible for his imprisonment and his patriotic self-sacrifice by death?

Every major advance in exploration, in science and philosophy has been made by great minds that were not influenced by the opinions of the masses. They were made by leaders who led, by brave men who lived for an idea and by an ideal. They were not politicians who sought popular approval. They were men who through personal courage and brains eventually earned public approval and added their bit to public thought and accomplishment.

Real thought is in the mind of the thinker. Words may be used to try to express it, but words can also be used in an effort to conceal it. Ideas are born of genius and nourished by thought. They are not brought to fruition by planting seed and then permitting the weeds of doubt to choke their growth.

In 1882 Richard H. Edmonds conceived the idea that the South could, and would become a great industrial section. He founded the MANUFACTURERS RECORD and he wrote and talked of the South's future to Southerners, Northerners and Westerners alike. He had faith in an idea and he stuck to it. He was right.

A very few people would rather be Willie than just another buck private. Some just have to be Wright brothers or a Billy Mitchel or a Richard Edmonds. They are not indulging in the tawdry showmanship of a Messianic complex. They think they are right and there is something inside themselves that compels them to insist that they are right.

Let's get some "Willies" in government.

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# Planned Deception

The pattern into which our government is trying to fit our American social and economic life is now becoming clear to all intelligent people.

The blundering behind which the real governmental planners hide, and find scapegoats when necessary, is now being recognized for what it really is.

The mistakes charged to Washington are not all mistakes. No group of men could be so dumb as critics believe are those who compose the New Deal. Not at all. There is a plan and a pattern for carrying it out. These planners hide behind the smoke screen of blunders to shield a deliberate attempt to transform our individual freedom into a collectivist society, taking its motivation, and in time even its thinking from a centralized control.

This is not a pretty picture for Americans. This is not what we have asked our boys to fight for. This is not what we, as self-respecting men and women, spent the years of our lives for, so that we could pass on a real heritage to our children.

The little business man who works at his own business must realize now that he has been and is being bedevilled by government in order that government, through its subsidies and financing of large industrial enterprise, and through its control or supposed control of labor leaders appointed to fat government jobs, can perpetuate itself and its control over all the rest of us. The same thing applies to the farmer and every other self-supporting man.

Such a future for America is unthinkable. A comparison between the honorable and courageous men who signed their names to the Declaration of Independence 177 years ago and those who, by bureaucratic authority alone, represent their descendents today should make one and all of us bow our heads in shame.

Some of us have had the privilege of serving our country in the war with Spain or in World War No. 1. Some of us have had the privilege of saying a cheerful good-bye to our sons who are serving in this war. All of us have the privilege and obligation, under our form of government, of seeing that our services and our boys' services will not have been in vain.

The American way of life has proved itself to be the right way of life for Americans. Let us make it our individual business to see that the American way is preserved.

# ★ BEAUMONT ★

## 100% War Production!

BEAUMONT MANUFACTURING COMPANY points with pride to its record in the production of vital materials for war. In every branch of the service, on every battle-front products from this plant play an important part.

Beaumont was the first plant to win the coveted Army-Navy "E" flag in South Carolina. It was the third plant to be so honored in the entire South.

And again, after continued and determined effort and patriotism, it was awarded the White Star.

Proud as we are of this achievement, we look forward to an early victory so that our facilities will again be placed at the command of our patient customers.

# Beaumont Manufacturing Co.

SPARTANBURG,
SOUTH CAROLINA

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

# Absenteeism or Vacations

***A Rose by any other name—***

Nobody objects to the vacations taken by hard pressed public executives who may need a temporary rest, despite the fact that most of us in comparatively minor executive positions can not reconcile the word vacation with conscience. But when union contracts stipulate annual vacations for their members we believe that some consideration should be given to the men in the armed forces who are on duty twenty-four hours every day, including Sunday, and to those of us who willingly carry the civilian burden of productive planning and execution and somehow find time on Sundays and at night to continue the work for a former colleague now in the service.

This war may be an interesting game to some of our leaders. It may present an extraordinary opportunity to some of our labor leaders. But it is stern reality to the men in planes and tanks and fox holes. It is stern reality to the men afloat and to those who spend most of their time under the seas. It is stern reality to every man who places his personal honor and his sense of responsibility to his country and to civilization above his wish to escape from the thought of sweat and toil or to capitalize for selfish reasons on the sweat and toil of his loved ones.

This is no time to take vacations. It is the time to do a job, yours and the other fellow's who is doing a job a great deal harder than the former jobs that he and you both did.

To be sure there are good reasons for vacations and relaxation. They make life more pleasant, but after all isn't that just a personally selfish objective? They may prolong life, but being merely human isn't that a purely personal objective? How about the pleasantness of life for the fellow who has not had a bath since goodness knows when and whose life may be snuffed out before he hears the whine of the bullet that hit him?

We, in America, civilian as well as military, are fighting for an ideal. We are fighting for the ideal that our nation will guarantee to its citizens, not freedom from want or fear but freedom to develop their personalities in a country that guarantees them freedom to be themselves, freedom to live their own lives under the law, freedom to determine their own destinies.

# The Public Wants Facts

Instead of the mass of political propaganda and ill conceived opinions that emanate from the multiplicity of publicity agencies, including the Office of War Information, in Washington the public wants FACTS.

It wants FACTS so that it can form its own opinions. It wants FACTS so that its attitude on any governmental subject may be analyzed by the composite thought of the nation as a whole and not to the opinion of some one of the many half-baked copy boys who help to make Washington's housing situation so acute. Opinions from OWI are gratuitous.

It wants to know why these peurile pen-pushers are on the government payroll, our payroll that has to be met by every taxpayer and we fear by his children and grandchildren—and so ad infinitum.

It wants to know why government agencies, bureaus and departments each need scores or hundreds of juvenile journalists to color FACTS that they should make public for public interpretation.

It wants to know why these same agencies, bureaus and departments can not assemble the FACTS that the public should know, transmit them to a censor (in war time) for approval, and then have them issued to the public as FACTS.

It wants to know why the government is spending the taxpayer's money for the thousands of tons of paper and the millions of dollars of printing that are wasted annually in the attempt to justify the present procedure which includes political propaganda both here and abroad.

It wants to know why the government is spending millions of dollars of the taxpayer's money by permitting the Post Office to carry this material free of charge.

It wants to know why one competent man in each agency, bureau and department, with a capable secretary to assist him, can not assemble all of the FACTS that should be published.

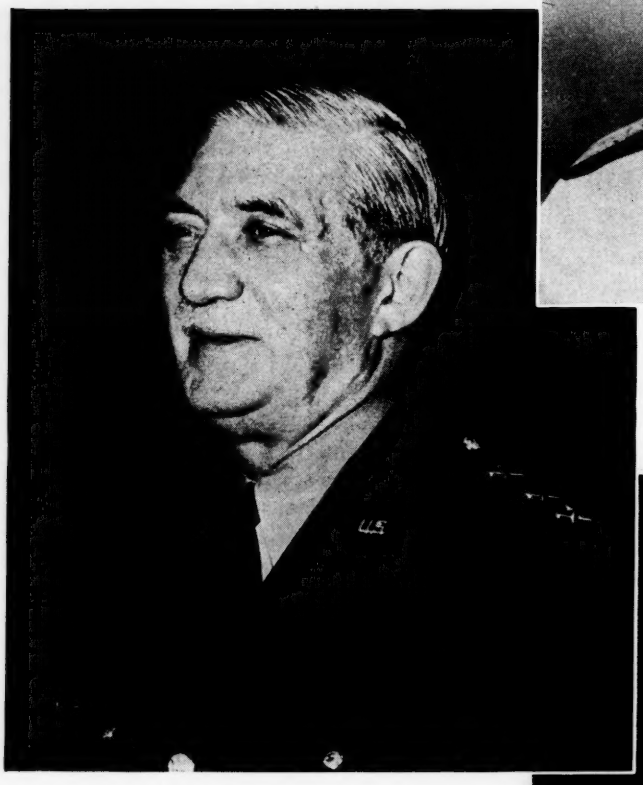
It wants to know why when FACTS are gathered in such manner they can not be turned over to a War Censor, not an office of War Information, who has authority to withhold publication of these FACTS, and as at present no authority to change or alter them in any way.

It wants to know why there is an Office of War Information.

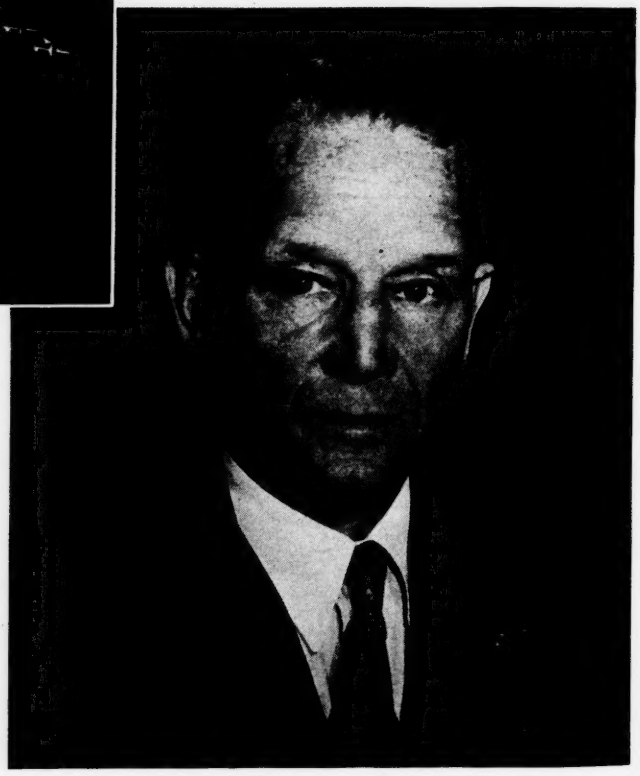
It wants to know why a War Censor needs only a few assistants. The public's answer is because it is his duty to pass upon FACTS only.

It wants to know who is fighting this war, America or the temporary inhabitants of the city of Washington.

**Admiral Claude C. Bloch, U.S.N.-Ret.**
***Chairman, U. S. Navy Board for Production Awards***



**Lt. General William S. Knudsen**
***Chairman, U. S. Army Board for Production Awards***



**Rear Admiral Emory S. Land, U.S.N.-Ret.**
***Chairman, U. S. Maritime Commission***

# THE SOUTH PRODUCES---

## —for the Navy

*By*

ADMIRAL CLAUDE C. BLOCH, USN-Ret.
*Chairman of the Navy Board for Production Awards.*

American industries and shipyards today are humming with activity as the soldiers on the production front drive forward in their untiring efforts to produce the weapons and war materials necessary to defeat the ruthless Axis aggressors.

The South, a section of our country that was primarily an agricultural region, is now an industrial area also. Today the South teems with industries producing countless articles necessary to the war effort.

A large part of these products are being made for our Navy. Southern shipyards are setting new records in the building of warships and cargo vessels. Southern steel mills are contributing their part to our ever-growing Navy. In almost every city, village and hamlet in the South, factories pour out an endless stream of materials and weapons for the Navy.

Every individual, labor and management alike, in the industrial South is contributing his share in this war of weapons. This must continue until victory is ours. Each worker must be on the job every workday, doing his best every hour he is working. He must guard against waste, work spoilage, and rejects. He must make every minute of his time count, as though victory depended upon his efforts alone.

Given the ships and weapons, the Navy will carry the battle to the enemy throughout the seven seas.

The Navy is counting on the soldiers of the production line. I know they will deliver the goods.

## —for the Army

*By*

LT. GENERAL WILLIAM S. KNUDSEN
*Chairman of the Army Board for Production Awards*

When America was suddenly plunged into war, military leaders turned to the nation's great industrial system and to the diligence of millions of working men and women for the weapons to destroy our enemies.

How well the American team of capital and labor responded has been written in our glorious victories in Tunisia, in the South Pacific and in the skies over Europe, as well as on the scattered battlefronts where the United Nations are using American-made implements of war.

With its factories geared for war goods, the South has forcefully demonstrated its adaptability and its resourcefulness in its rapid transformation from peacetime to wartime production.

Steel, textiles, weapons and many other vital war materials are flowing from these factories in endless streams.

The South has demonstrated already its practical patriotism with management and labor working shoulder-to-shoulder in our hour of crisis.

There must be no let-down in this spirit. The Army's fighting men have every confidence that they will not lack for the proper weapons and equipment to assure utter defeat of the Axis because of failures on the industrial production fronts.

## —for the Merchant Marine

*By*

REAR ADMIRAL EMORY S. LAND, USN-Ret.
*Chairman, U. S. Maritime Commission*

It is with considerable pleasure that we in the Maritime Commission join with the MANUFACTURERS RECORD in paying tribute to the shipyards and industrial firms of the South which have won the Maritime Commission's "M" award.

The contribution to our war production by the industrial firms of the southern states is gratifying to the Commission and to the country. The Commission's records show that out of the many southern firms serving our ship construction program, twelve industrial firms and nine shipyards in southern territory have won the right to fly the Commission's "M" pennant.

It is not an empty honor these firms have won. It is recognition that the workers and the managements of these firms have made outstanding performances in production and delivery, and is testimony to the determination of the workers that the sinews of war shall keep flowing.

The Maritime Commission has individually congratulated these firms at the times of the awards. Collectively we congratulate them once more. Their example is truly inspiring.

# The SOUTH'S Industrial ROLL OF HONOR

The MANUFACTURERS RECORD takes pride and pleasure in paying tribute in this issue to those plants in the South whose untiring management — employee efforts have won for them the distinction of an Army-Navy "E" or Maritime "M" pennant for production achievement.

The white-pillared homes and "moonlight and roses" atmosphere usually associated with the South are thus shown to be deceptive when looking at the job this part of the country is doing in the war.

These pleasant traditions are indeed only an attractive fringe to a region that is as workaday and practical as the billions of yards of cotton cloth its textile mills are producing to do everything from protecting war equipment in damp jungles to providing clothes for the armed forces.

It should not be imagined however, that cotton cloth is the only product the South is contributing to the war. On the contrary, southern plants are furnishing every conceivable kind of product from ships and tanks to the tiniest of precision parts. Furthermore, they are supplying not only the manufactured article but a wealth of raw materials to make and keep those products operating.

The South, traditionally agricultural, has demonstrated its diversified industrial ability and justified the claim that this region offers industry its greatest opportunity.

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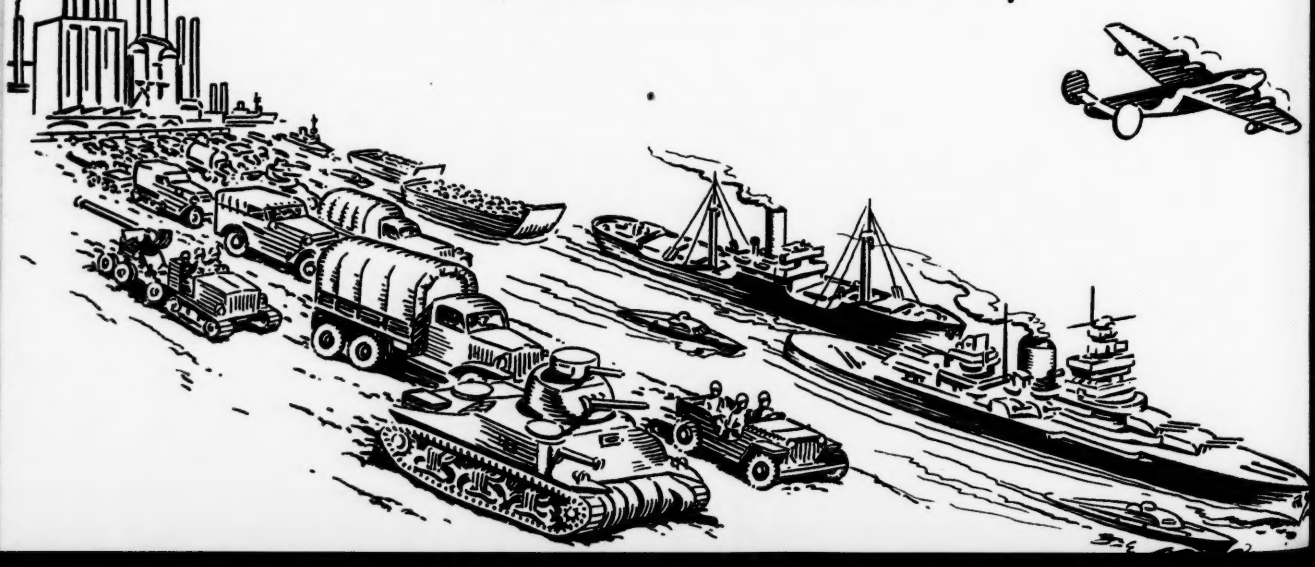
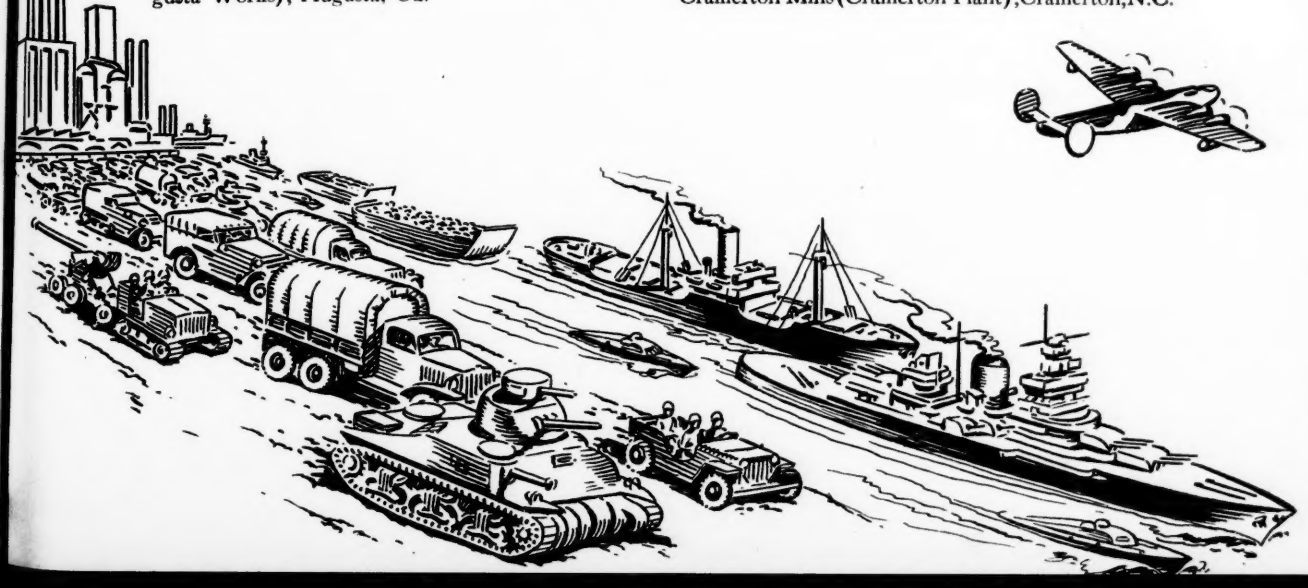
On the following pages is printed a list of those plants in the South which have been granted an Army-Navy "E" or Maritime "M" award. Every effort has been made to make this list complete and accurate, but the additions of awards to southern plants have been increasing with such rapidity it is possible that some have not been included, which is a condition beyond our control. Editor.



# The SOUTH'S Industrial ROLL OF HONOR

## Army-Navy "E" Awards

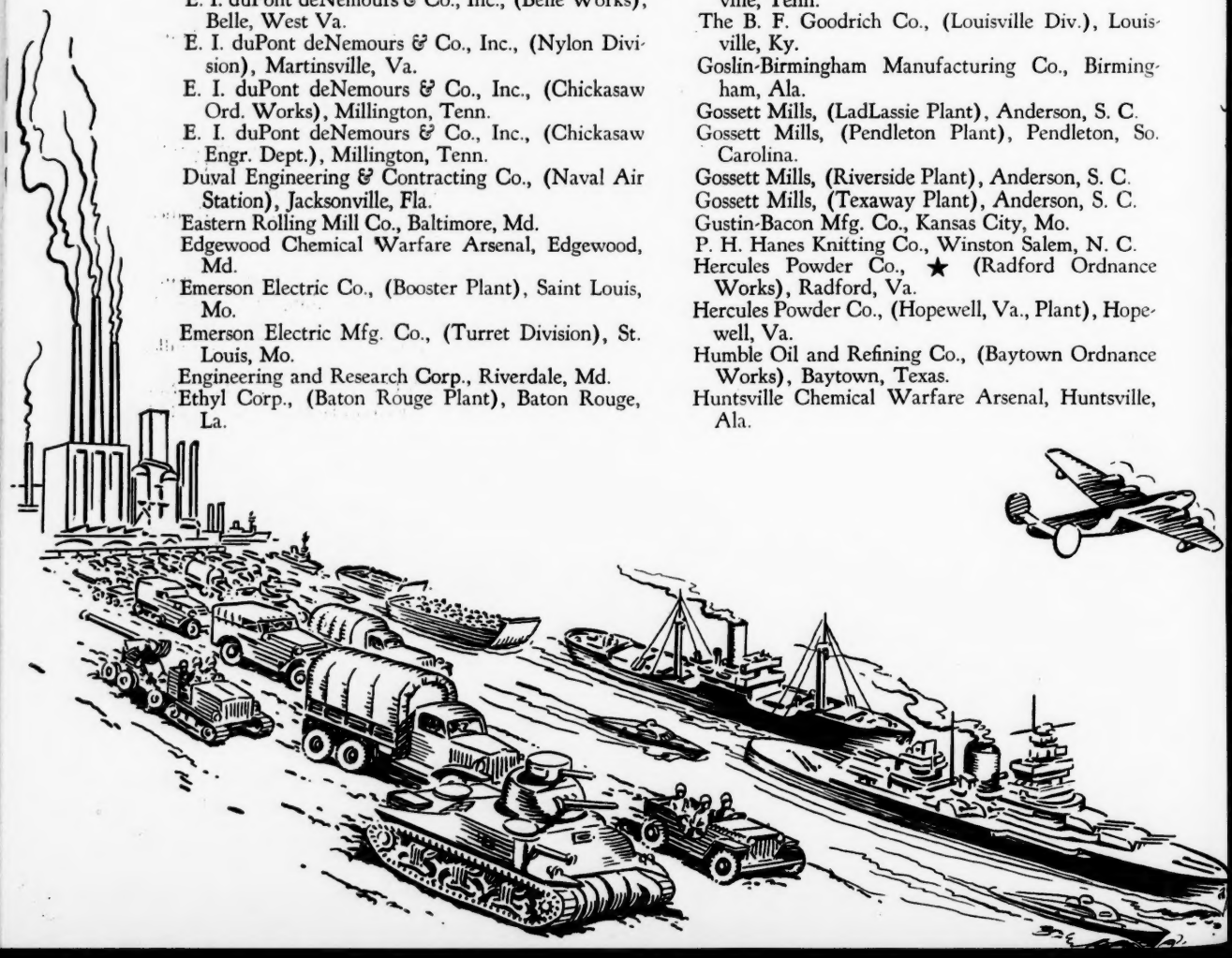
Aberdeen Proving Ground, Aberdeen, Md.
Aberfoyle, Inc., Norfolk, Va.
The Absorbent Cotton Company of America, Valley Park, Missouri.
Aluminum Company of America, (Aluminum Ore Co.), Mobile, Ala.
Aluminum Company of America, (Carolina Aluminum Co.), Badin, North Carolina.
Aluminum Company of America, (Republic Mining & Mfg. Co.), Bauxite, Ark.
American Art Metals Co., Inc., Atlanta, Ga.
American Cast Iron Pipe Co., Birmingham, Ala.
American Cyanamid & Chemical Corp., (Bauxite Mining & Processing Div.), Little Rock, Ark.
American Finishing Co., Memphis, Tenn.
American Lava Corp., Chattanooga, Tenn.
American Rolling Mill Co., (Ashland Plant), Ashland, Kentucky.
American Silk Mills, Inc., Orange, Virginia.
American Thread Co., (Dalton Mills), Dalton, Ga.
American Well & Prospecting Co., Corsicana, Texas.
The Anacin Manufacturing Co., Knoxville, Tenn.
Annapolis Yacht Yard, Inc., Annapolis, Md.
Aragon-Baldwin Mills, (Whitmire Plant), Whitmire, S. C.
Arlington Millwork Co., Arlington, Virginia.
Armour & Co., Springfield, Mo.
Army Map Service, Washington, D. C.
Atlas Powder Co., ★ (Weldon Spring Ord. Works), Weldon Spring, Mo.
Atmospheric Nitrogen Corp., (Ohio River Ord. Works), Henderson, Kentucky.
George D. Auchter Co. (N.A.Sta), Jacksonville, Fla.
Avondale Mills, Sylacauga, Ala.
Babcock & Wilcox Co., ★ (Refractories Div. Augusta Works), Augusta, Ga.
E. B. Badger and Sons Co., (West Va. Ord. Works), Point Pleasant, West Va.
Barium Reduction Corp., ★ S. Charleston, W. Va.
Barnhardt Manufacturing Co., Charlotte, N. C.
Beaumont Iron Works, Beaumont, Texas.
Beaumont Manufacturing Co., Spartanburg, S. C
Bendix Aviation Corp., ★ (Bendix Radio Div.), Baltimore, Md.
Bendix Aviation Corp., (Freiz Instrument Div.), Baltimore, Md.
Benson Manufacturing Co., Kansas City, Missouri.
Bethlehem Steel Co., (Sparrows Point Plant), Baltimore, Md.
Black & Decker Mfg. Co., Towson, Md.
Blueridge Co., Inc., Glasgow, Rockbridge Co., Va.
Charles T. Brandt, Inc., ★★ Baltimore, Md.
The Brecon Loading Co., (Coosa River Ord. Plant), Talladega, Ala.
Broderick & Bascom Rope Co., ★★ (St. Louis Plant), St. Louis, Mo.
The Brookside Mills, Knoxville, Tenn.
Brown Shipbuilding Co., ★ Houston, Texas.
Buckeye Cotton Oil Co., Memphis, Tenn.
Byrne Organization, (Training Base), Solomons, Md.
Callaway Mills, (Hillside Plant), LaGrange, Ga.
Chatham Manufacturing Co., ★ Elkin, N. C.
Cities Service Defense Corp., (Maumelle Ordnance Plant), Little Rock, Ark.
Cochran Foil Co., Louisville, Ky.
Columbian Steel Tank Co., Kansas, City, Missouri.
Consolidated Steel Corp., Ltd., (Shipbuilding Div.), Orange, Texas.
Convenience, Inc., (Plants #1 and #2), Greenville, S. C.
Cook Paint & Varnish Co., North Kansas City, Mo.
Cramerton Mills (Cramerton Plant), Cramerton, N.C.



# The SOUTH'S Industrial ROLL OF HONOR

## Army-Navy "E" Awards

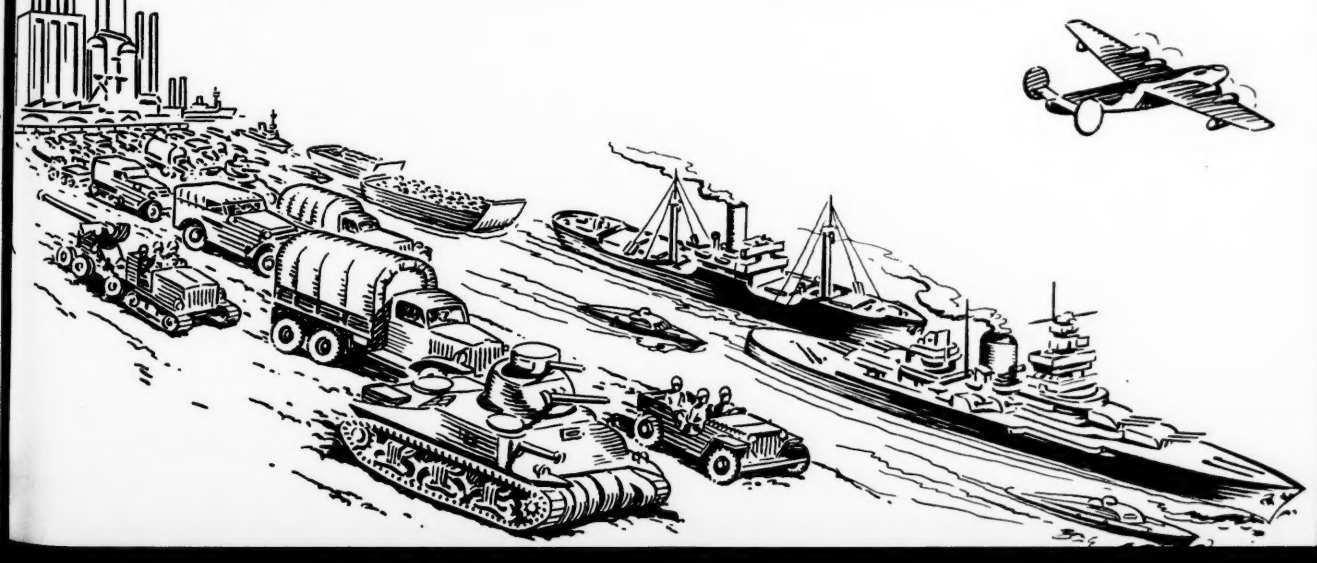
Crawford-Austin Mfg. Co., ★ Waco, Texas.
Crawford Manufacturing Co., (Kansas City Branch), Kansas City, Mo.
Crawford Manufacturing Co., Richmond, Va.
Crosse & Blackwell Co., Baltimore, Md.
Daytona Beach Boat Works, Inc., Daytona Beach, Fla.
The Dixie Cotton Mills, La Grange, Ga.
Dow Chemical Co., (Tex. Division), Freeport, Tex.
Dow Magnesium Corp., Velasco, Texas.
Dunn Construction Co. & Polk Smartt Paving Co., Millington, Tenn.
Dunn Woolen Co., Martinsburg, West Va.
E. I. duPont de Nemours & Co., Inc., (Alabama Ord. Works), Sylacauga, Ala.
E. I. duPont deNemours & Co., Inc., (Morgantown Ord. Works), Morgantown, West Va.
E. I. duPont deNemours & Co., Inc., (Belle Works), Belle, West Va.
E. I. duPont deNemours & Co., Inc., (Nylon Division), Martinsville, Va.
E. I. duPont deNemours & Co., Inc., (Chickasaw Ord. Works), Millington, Tenn.
E. I. duPont deNemours & Co., Inc., (Chickasaw Engr. Dept.), Millington, Tenn.
Duval Engineering & Contracting Co., (Naval Air Station), Jacksonville, Fla.
Eastern Rolling Mill Co., Baltimore, Md.
Edgewood Chemical Warfare Arsenal, Edgewood, Md.
Emerson Electric Co., (Booster Plant), Saint Louis, Mo.
Emerson Electric Mfg. Co., (Turret Division), St. Louis, Mo.
Engineering and Research Corp., Riverdale, Md.
Ethyl Corp., (Baton Rouge Plant), Baton Rouge, La.
Exposition Cotton Mills Co., Atlanta, Ga.
Fairchild Engine and Airplane Corp., (Airplane Div.), Hagerstown, Md.
Fairforest Finishing Co., Clevedale, S. C.
Food Machinery Corp., Lakeland, Fla.
Freeport Sulphur Co., Freeport, Tex.
Freeport Sulphur Co., Port Sulphur, La.
The Fulton Sylphon Co., ★★Knoxville, Tenn.
Gadsden Ordnance Plant, Gadsden, Ala.
General Machinery Ordnance Corp., (U. S. Navy Ordnance Plant), South Charleston, West Va.
General Motors Corp., (Fisher Memphis Aircraft Div.), Memphis, Tenn.
Fred S. Gichner Iron Works, Inc., Washington, D. C.
Glamorgan Pipe & Foundry Co., Lynchburg, Va.
The B. F. Goodrich Co., (Clarksville Div.), Clarksville, Tenn.
The B. F. Goodrich Co., (Louisville Div.), Louisville, Ky.
Goslin-Birmingham Manufacturing Co., Birmingham, Ala.
Gossett Mills, (LadLassie Plant), Anderson, S. C.
Gossett Mills, (Pendleton Plant), Pendleton, So. Carolina.
Gossett Mills, (Riverside Plant), Anderson, S. C.
Gossett Mills, (Texaway Plant), Anderson, S. C.
Gustin-Bacon Mfg. Co., Kansas City, Mo.
P. H. Hanes Knitting Co., Winston Salem, N. C.
Hercules Powder Co., ★ (Radford Ordnance Works), Radford, Va.
Hercules Powder Co., (Hopewell, Va., Plant), Hopewell, Va.
Humble Oil and Refining Co., (Baytown Ordnance Works), Baytown, Texas.
Huntsville Chemical Warfare Arsenal, Huntsville, Ala.



# The SOUTH'S Industrial ROLL OF HONOR

## Army-Navy "E" Awards

Hussman-Ligonier Co., St. Louis, Mo.
The International Nickel Co., Inc., ★★★★ Huntington, West Va.
Frank Ix and Sons, Inc., Charlottesville, Va.
Jackson-Evans Mfg. Co., St. Louis, Mo.
Casey Jones, Inc., Baltimore, Md.
J. A. Jones Construction Co., Hoffman, N. C.
R. A. Jones and Co., Inc., Covington, Ky.
A. D. Julliard and Co., Inc., (Aragon Mills Div.), Aragon, Ga.
Kelley-Koett Mfg. Co., Covington, Kentucky.
The C. M. Kemp Mfg. Co., Baltimore, Md.
Koppers Co., (American Hammered Piston Ring Div.), Baltimore, Md.
Lambert Pharmacal Co., St. Louis, Mo.
Landis Machine Co., ★ (M 52 Fuse Plant), St. Louis, Mo.
Lanett Bleachery & Dye Works, ★ Lanett, Ala.
Lansdowne Steel and Iron Co., (Alabama Division), Gadsden, Ala.
Lebanon Woolen Mills, Inc., ★ Lebanon, Tenn.
R. G. LeTourneau, Inc., Toccoa, Ga.
Levingston Shipbuilding Co., Orange, Texas.
Lincoln Engineering Co., St. Louis, Mo.
Lincoln Mills of Alabama, Huntsville, Ala.
Lone Star Defense Corp., (Lone Star Ord. Plant), Texarkana, Texas.
Louisville Tin and Stove Co., Louisville, Ky.
Lufkin Foundry & Machine Co., Lufkin, Texas.
McCormick & Co., Inc., Baltimore, Md.
McLean Contracting Co., (Naval Operating Base), Norfolk, Va.
McQuay Norris Manufacturing Co., (St. Louis Ord. Plant, Forest Park Core Div.), St. Louis, Mo.
McQuay Norris Manufacturing Co., (St. Louis Ord. Plant, Siemers Lane Core Div.), St. Louis, Mo.
Marshall Field & Co., (Mfg. Div, Woolen Mill), Spray, N. C.
Martin & Schwartz, Inc., (Mill Street Plant), Salisbury, Md.
Maryland Drydock Co., Baltimore, Md.
Masonite Corp., Laurel, Miss.
Mathews Cotton Mill, Greenwood, S. C.
Merck & Co., Inc., (Stonewall Plant), Elkton, Va.
Merrill-Stevens Drydock Co., Miami, Fla.
John E. Mitchell Co., (Dallas Plant), Dallas, Texas.
Monsanto Chemical Co., (Longhorn Ordnance Works), Marshall, Texas.
Monsanto Chemical Co., (St. Louis Plant, Organic Chemical Div.), St. Louis, Mo.
Mt. Vernon Woodberry Mills, Inc., (Tallassee Mills), Tallassee, Ala.
Murphy Elevator Co., Louisville, Ky.
The Murray Co., Atlanta, Ga.
Philip Myers Co., Towson, Md.
Nashville Bridge Co., Nashville, Tenn.
National Carbon Co., (Clarksburg Plant), Clarksburg, West Va.
National Fireworks, Inc., (Maryland Branch), Elkton, Md.
National Fireworks, Inc., (Cordova Plant), Memphis, Cordova, Tenn.
National Munitions Corp., Carrboro, N. C.
National Zinc Co., Inc., ★ Bartlesville, Okla.
Navy Yard, ★ Charleston, S. C.
The Newnan Cotton Mills, Newnan, Georgia.
Nickey Brothers, Inc., Memphis, Tenn.
W. C. Norris Manufacturer Inc., Tulsa, Okla.
North American Aviation, Inc., (Dallas Division), Dallas, Texas.
North American Aviation, Inc., (Texas Division), Dallas, Texas.
Nunnally & McCrea Co., Inc., Atlanta, Ga.



# The SOUTH'S Industrial ROLL OF HONOR

## Army-Navy "E" Awards

Ohio-Apex, Inc., Nitro, West Virginia.
Ozark Ord. Works Const. Proj., El Dorado, Ark.
Pangborn Corp., Hagerstown, Md.
Peerless Woolen Mills, Rossville, Ga.
Pidgeon Thomas Iron Co., Memphis, Tenn.
Piedmont Cotton Mills, Egan, Ga.
Pine Bluff Arsenal, (Chemical Warfare Service), Pine Bluff, Ark.
Porcelain Metals Corp., Louisville, Kentucky.
Procter and Gamble Defense Corp., (Wolf Creek Ordnance Plant), Milan, Tenn.
Proximity Manufacturing Co., Greensboro, N. C.
Raybestos-Manhattan, Inc., ★ (General Asbestos & Rubber Division), North Charleston, S. C.
Redstone Ordnance Plant, Huntsville, Alabama.
Reeves Bros., Inc., (Mills Mill #1), Greenville, S. C.
Reeves Bros., Inc., (Mills Mill #2), Woodruff, S. C.
Remington Arms Co., (Lake City Ordnance Plant), Independence, Mo.
Revere Copper and Brass Co., Inc., Baltimore, Md.
Revolution Cotton Mills, Greensboro, N. C.
Reynolds Metals Co., (Reynolds Research Corp., Container Division), Louisville, Ky.
Rheem Manufacturing Co., Sparrows Point, Md.
Rice-Stix Dry Goods Co., (Farmington Plant), Farmington, Mo.
Rodney Milling Co., (Kansas City Plant), Kansas City, Mo.
Rogers Diesel and Aircraft Corp., (Edwards Company Div.), Sanford, N. C.
Ross-Meehan Foundries, Chattanooga, Tenn.
Rustless Iron & Steel Corp., ★ Baltimore ,Md.
Sanderson and Porter, (Pine Bluff Arsenal), Pine Bluff, Ark.
Savannah Machine & Foundry Co., Savannah, Ga.
Scripto Manufacturing Co., Atlanta, Ga.
Silas Mason Co., Shreveport, La.
Slumber Products Corp., Memphis, Tenn.
Solvey Process Co.,(Hopewell Plant),Hopewell, Va.
Southern Steel Co., San Antonio, Texas.
Specialty Manufacturing Co., Houston, Texas.
Standard Wholesale Phosphate & Acid Works, Inc., (Curtis Bay Plant), Baltimore, Md.
Steel Products Co., Inc., Savannah, Ga.
J. L. Stifel & Sons, Inc., ★ Wheeling, West Va.
Stockham Pipe Fittings Co., Birmingham, Ala.
Sunnen Products Co., St. Louis, Mo.
Taylor Bedding Mfg. Co., Taylor, Tex.
Tennessee Copper Co., Copperhill, Tenn.
Tennessee Enamel Mfg. Co., Nashville, Tenn.
Tennessee Valley Authority, (Nitrate Plant No. 2), Wilson Dam, Ala.
Texas Gulf Sulphur Co., ★ (Galveston Loading Plant), Galveston, Texas.
Texas Gulf Sulphur Co., ★ (Newgulf Plant), Newgulf, Texas.
Texas Washer Co., Houston, Texas.
Thibodaux Boiler Works, Inc., Thibodaux, La.
Thomson Co., Thomson, Ga.
The Trion Co., Trion, Ga.
Tube Turns, Inc., Louisville, Ky.
The Tweedie Footwear Corp., Versailles, Missouri.
Tycoon Tackle, Inc., Miami, Fla.
Union Bleachery, Greenville, S. C.
United States Pipe and Fdry. Co., Birmingham, Ala.
United States Rubber Co., (Shelbyville Mills), Shelbyville, Tenn.
Universal Corp., ★ (Universal Building Products Corp.), Dallas, Texas.
Vendo Co., Kansas City, Mo.
Victor Chemical Works, ★ (Mt. Pleasant Plant), Mt. Pleasant, Tenn.
Virginia Bridge Co., Roanoke, Va.
Virginia Engineering Co., Inc., ★ Norfolk, Va.

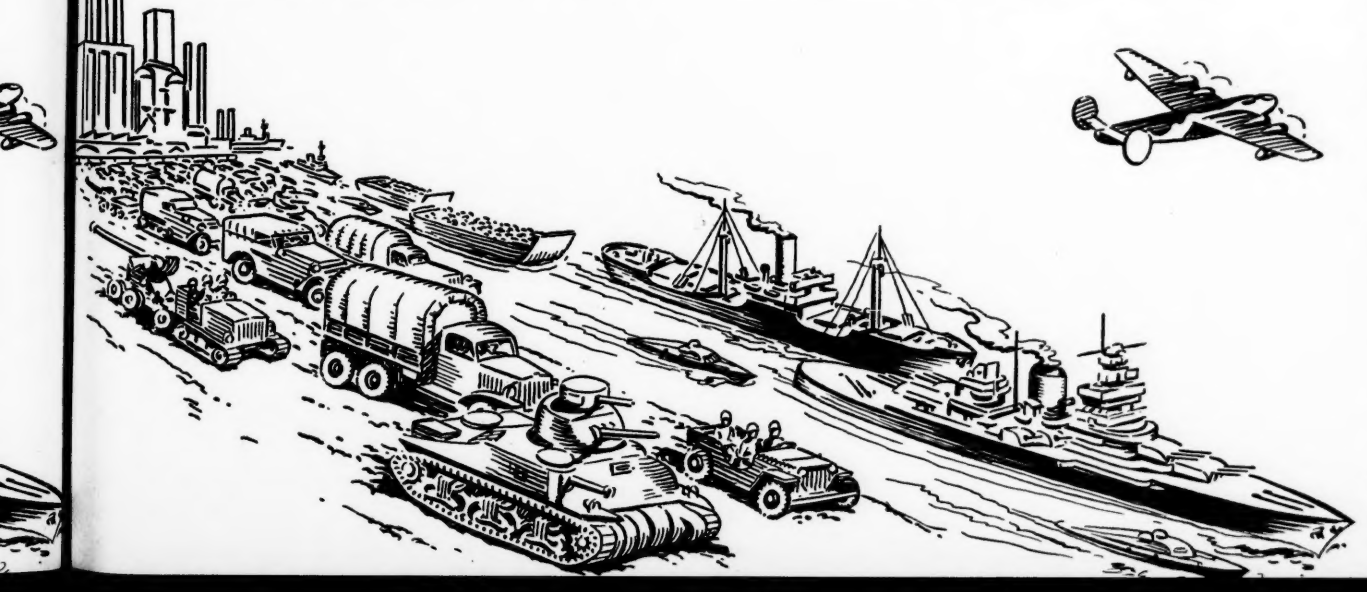
# The SOUTH'S *Industrial* ROLL OF HONOR

## Army-Navy "E" Awards

The Wadsworth Watch Case Co., Dayton, Ky.
Wagner Electric Corp., St. Louis, Mo.
Wald Manufacturing Co., Inc., Maysville, Ky.
Wannemaker Chemical Co., Orangeburg, S. C.
Ware Shoals Manufacturing Co., Ware Shoals, S. C.
Western Electric Co., (Point Breeze Works), ★ Baltimore, Md.
Westinghouse Electric & Mfg. Co., (Louisville Ord. Div.), Louisville, Ky.
Westinghouse Electric & Mfg. Co., (Radio Div.), Baltimore, Md.
West Point Manufacturing Co., ★ (Shawmut Mill), Shawmut, Ala.
West Point Mfg. Co., ★ (Langdale Mill), Langdale, Ala.
West Point Mfg. Co., ★ (Lanett Mill), Lanett, Ga.
West Point Mfg. Co., ★ (Fairfax Mill), Fairfax, Ga.
West Point Mfg. Co., ★ (Riverdale Mill), Riverview, Ala.
Wheeling Corrugating Co., (Wheeling Plant), Wheeling, West Va.
The Wheland Co., Chattanooga, Tenn.
Wood Mosaic Co., (Highland Park Division), Louisville, Ky.
Wright's Automatic Machinery Co., Durham, N. C.
Zenith Optical Co., ★ Huntington, West Va.

## Maritime "M" Awards

Alabama Dry Dock and Shipbuilding Co., ★ Emergency Shipbuilding Dept., Mobile, Ala.
Beaumont Iron Works Co., ★ Beaumont, Texas.
Bethlehem-Fairfield Shipyards, Inc., (**Eagle**), Baltimore, Md.
Bethlehem-Sparrows Point Shipyard, Inc., Sparrows Point, Md.
R. D. Cole Manufacturing Co., Newnan, Ga.
Combustion Engineering Company, ★ Chattanooga, Tenn.
Delta Shipbuilding Co., Inc., ★★★★ New Orleans, La.
Enterprise Wheel & Car Corporation, ★ Bristol, Tenn.-Va.
Goldens' Foundry & Machine Co., Columbus, Ga.
A. P. Green Fire Brick Co., ★ Mexico, Missouri.
Houston Shipbuilding Corporation, ★★★★★ Houston, Texas.
Ingalls Shipbuilding Corporation, Pascagoula Mississippi Yard, Pascagoula, Miss.
The Ingalls Iron Works Co., Inc., Birmingham, Ala.
Ingalls Iron Works Co., Inc., (Birmingham Tank Div.), Birmingham, Ala.
Koppers Company, ★ Bartlett-Hayward Div., Baltimore, Md.
Lynchburg Foundry Co., Lynchburg, Va.
North Carolina Shipbuilding Company, (**Eagle**), Wilmington, N. C.
Pennsylvania Shipyards, Inc., Beaumont, Texas.
Steves Sash & Door Company, San Antonio, Texas.
Todd-Galveston Dry Dock Co., Galveston, Texas.
Tube-Turns, Inc., ★ Louisville, Ky.
U. S. Coast Guard Yard, Curtis Bay, Baltimore, Md.



**WORTH FIGHTING AND WORKING FOR**

# The South's Industrial War Effort

THE men and women of the South, those of them not in uniform, have marshalled all their resources —their industry, their agriculture and their raw materials—in the battle of production for victory How successful they have been is attested by the long preceding list of plants which have been honored with an Army-Navy "E" or Maritime "M" award for excellence of production. From what here appears and the following pages can be gained some idea of what these southern men and women have done—are still doing. By so doing, they have built and are building a South that will offer its citizens returning from the war fronts real opportunities, a life in the country's most promising industrial empire.

The South not only holds nearly $14,400,000,000 in war industrial supply contracts but contributes importantly to the nation's output of agricultural products and other raw materials. This southern section of the United States is loaded with timber, coal, oil, iron ore and other minerals; its fields are under cultivation with everything from cotton and tobacco to soya beans, hemp and tung trees.

Combined with favorable climate, tremendous water power, modern industrial plants and the collective effort of some 44 million people, these resources make possible the immensely valuable composite of shipbuilding, steel, aluminum and other metals, chemicals, synthetic rubber, petroleum products, explosives and ordnance, vegetables and fruits, vegetable oils, aircraft, lumber products and naval stores, textiles and clothing, machinery and precision parts which the South is turning out to win this war.

U. S. Navy Photo from "Ships"

*Two depth charges explode simultaneously as a navy vessel launches its deadly attack against an Axis submarine. On the horizon at extreme left may be seen a merchant vessel hurrying away. The geysers tell better than words the power of depth charges which are made from material produced in the South.*

From the beginning of the defense program in June, 1940, through May, 1943, manufacturers of the South received prime war supply contracts totaling nearly $14,400,000,000. This figures does not include subcontracts or prime contracts under $50,000 which alone would amount to many hundreds of millions of dollars. Nor does it include the hundreds of millions of dollars worth of project orders placed by the various Navy Yards

in this region. Neither does it include some of the most significant products of the South—the fuel (coal, oil, gasoline and natural gas), timber, food, raw cotton, vegetable oils, minerals — and their derivatives and by-products—all of which are vital for both the firing line and the home front.

### South's Manufacturing Plants now Producing at Annual Rate of $16,500,000,000

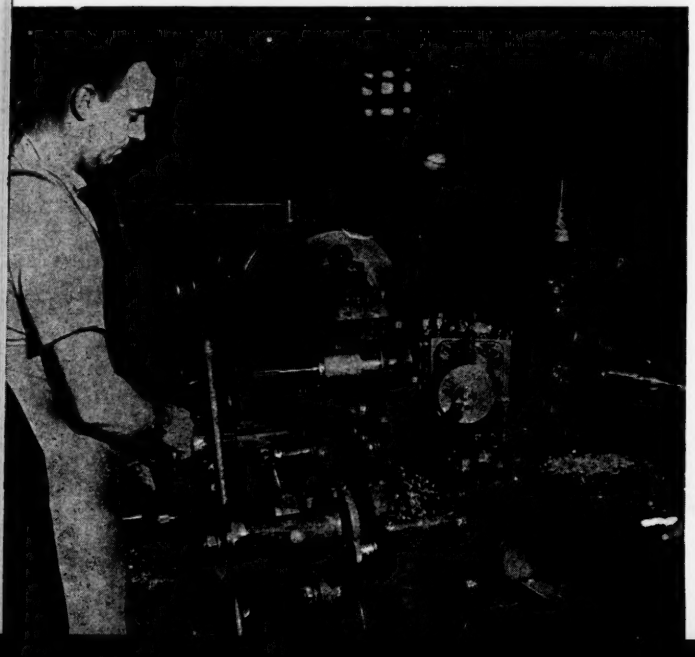
Looking beyond the scope of war supply contracts in the manufacturing field alone, it is conservatively estimated that the approximately 16,500 manufacturing establishments in this region (each having an output of $50,000 or more in 1939) are currently producing at an annual rate of close to $16,500,000,000. While a substantial portion of this total is for direct and indirect war purposes, as represented by subcontracting, food processing and other manufacturing activities not included in the war supply contract lists, only a small percentage is for products or facilities that will cease to exist with the coming of peace, and it should not be assumed otherwise.

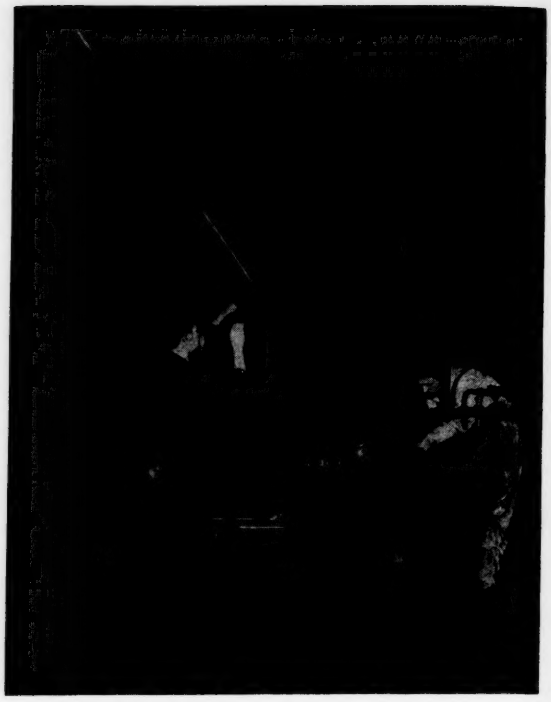
### $9,452,000,000 for War Facilities

In addition to contracts placed for actual supplies of war, the South's war facilities have been expanded more than $9,452,000,000 through May of this year. Of this, approximately $4,368,000,000 is for such non-industrial purposes as cantonments, air bases, hospitals, etc. The remaining $5,084,000,000 represents contracts placed for new industrial plants, financed to the extent of $3,966,000,000 by the government and $1,118,000,000 by private industry. Many of these new plants, which have sprung up aladdin-like in former cotton fields or in remote mountainous or plains country, are among the largest and most modern in the nation.

Even though the effects of some of its largest new

*Operating a turret lathe in the production of torpedoes in a Southern plant.*





*Assembling anti-aircraft guns in a Southern plant where assembly-line methods have resulted in mass-production.*

facilities have not yet been fully felt, the South has experienced a major increase in industrial employment and one that will have a pronounced beneficial effect on its post war industrial development. The bulk of a total increase from 7,804.000 workers in December, 1940 to 10,274,000 in December, 1942, was in manufacturing, where employment advanced from 3,774,000 to almost 5,500.000, a gain of nearly 41 per cent. The group of industries engaged in production of war goods, including chemicals, iron and steel, nonferrous metals, machinery, shipbuilding, aircraft, and ordnance, showed the greatest employment gain of any individual section of manufacturing activity—a rise of almost 200 per cent.

Training of war workers is being done on an extensive scale. In addition to the usual plans for Government-aided training courses in evening public schools, trade schools, and in plant instruction, the South's institutions of higher learning are concentrating on preparing thousands for war jobs.

The Army itself has more men in training in this group of states than any other comparable section of the country. Training courses cover a wide range of subjects with air activities emphasized.

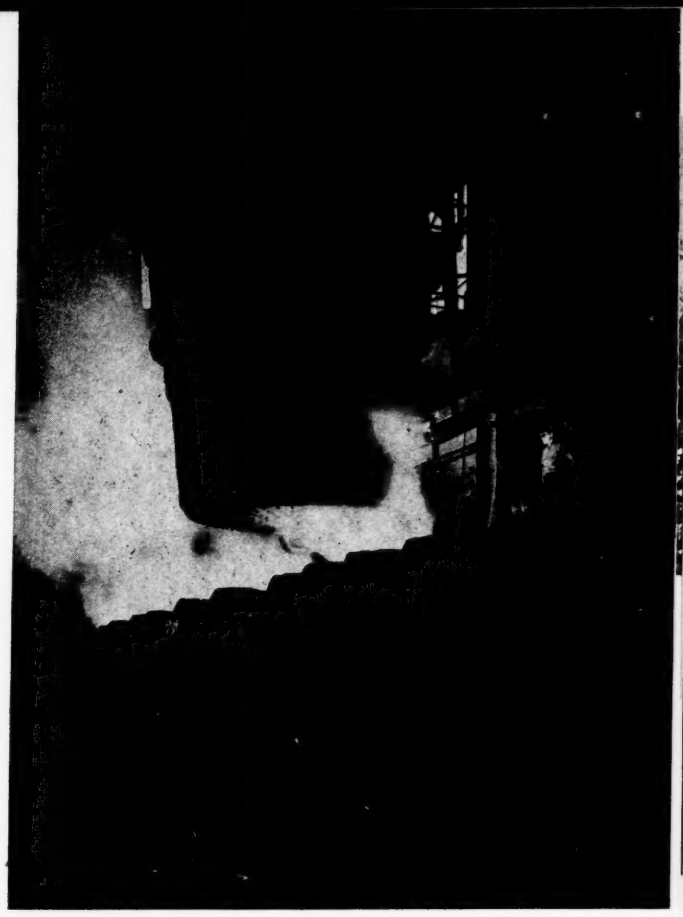
Truly the South can no longer be called merely an agricultural area. Even in 1939 the value of manufactured products outdistanced those of agricultural origin by nearly 3 to 1. Inherent advantages of climate and natural resources and abundance of good native labor attracted many of the country's largest and most progressive industries before the war; to-

day, they are expanding their activities enormously and presaging a post war industrial tempo such as has not before been envisioned.

## ELECTRIC POWER

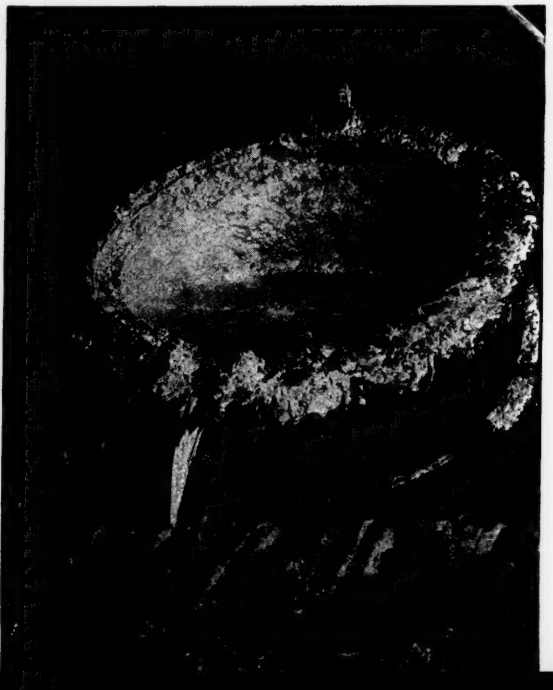
The South, which has been recognized for several years as a region of cheap and abundant power, produced 18,306,925,000 kilowatt hours of electricity in 1932, 22 per cent of the national output. Ten years later, in 1942, the South produced 48,562,052,000 kilowatt-hours, a gain of 165 per cent while the rest of the country increased only 111 per cent. That this lead is being maintained is evident from the fact that $284,830,115 was spent for electric construction in the South during 1942—nearly 38 per cent of the national expenditure and th year the $210,421,190 budget for the South is well over 39 per cent of what the entire country will spend for this purpose. What this will mean in terms of electric power production will not be apparent for at least another year when all these facilities are in production and the consuming industrial plants are in full operation.

Because it might give aid, but certainly no comfort, to the enemy, details cannot now be given concerning all of this expansion but some conception of what has been accomplished can be seen when it is stated that just one manufacturing plant in Tennessee consumes in power about one-third of what the entire South consumed only ten years ago. In one part of the South made up of seven southeastern states, the 1942 power consumption was 225 per cent above the corresponding figure of only eight years ago. By far the largest part of this power is currently being used for war purposes, but when peace comes it still will be available for normal activities and what it will mean in the further industrialization of the South requires little imagination.



*From more than 20 operating steel plants located in ten Southern States are pouring forth great tonnages of shapes, bars, plates, strips and wire that are processed into implements of war.*

*Production of aluminum has doubled and redoubled in the South to make it the largest producing area in the country. Prime requisites of this industry are electric power and bauxite ore, both of which are plentiful in the South.*



## METALS

Though iron and steel is now produced in many parts of the South ranging from Maryland to Texas, the Alabama area remains the largest and is in fact the country's second largest source of iron ore daily growing more important as available supplies of high grade Lake ores are being depleted. Here in Alabama, in a strip of territory 150 miles deep and extending 200 miles east and 50 miles west of Birmingham, are vast quantities of iron, coal and limestone, situated for efficient utilization more conveniently than in any area in the world.

Practically all the pig iron used in the South today is manufactured at blast furnaces in Maryland, West Virginia, Kentucky, Alabama, Tennessee, Virginia and Texas. Together these blast furnaces, now numbering more than forty, have an annual capacity close to ten million tons and the more than twenty operating steel plants located in ten southern states have an ingot capacity exceeding twelve million tons. From

***Not only are tanks themselves made in the South but also their radial diesel engines while of course most of the men's uniforms are Southern products even to their leather shoes and helmets.***

the rolling mills in these and other plants is pouring forth great tonnages of structural shapes, bars, plates, strips, wire and woven fencing while still other mills are turning out cast iron pipe and fittings for war purposes.

Latest newcomer to the ranks of iron and steel producers is Texas, where, at Houston, Fort Worth and Longview, huge new plants—some still not yet complete, have come to stay permanently. Following the peace that is to come, they will participate in the expanded domestic and export trade. Meanwhile, these plants are supplying not only finished products but enormous quantities of raw materials for the old and new metal using industries of the South which are at present engaged in the production of items ranging all the way from bomb and shell castings and ship's plates to the most intricate precision parts.

### Magnesium and Tin

Texas also is the location of two other metals, one of which is tin. Though the ore is imported, a smelter —the first in this country, has been built and is in full operation to ease the situation caused by Japanese conquest of the world's principal tin producing areas in the East. The other metal is magnesium, which in this particular instance is derived from seawater. Both of these metals are vital to the war effort and undoubtedly will play an important part in the South's post war industry, not alone for themselves but as drawing cards for other industries using these products.

### Aluminum

Finally, there is that indispensable metal, aluminum. Though by no means a newcomer to the South, this all important industry has been expanded to meet war demands far beyond anything conceived of in normal times. Establishment of this industry in the South was no accident but was so located because of the availability of adequate power—it is one of these plants which is using more than 3½ billion kilowatt hours of electricity per year, and the presence of this country's only source of bauxite, the ore from which aluminum is made. From one or two plants in this territory, aluminum production has doubled and redoubled until now it extends to several gigantic plants operated by two companies and is the largest producing area in the country—possibly the largest in the world. In the not far distant future it is likely that the use of the South's large and cheap power supply will be employed in a completely new process now being examined to convert the South's almost unlimited clay resources into the basic material from which aluminum is made. Certainly, the supply of this strong, light-weight metal now being used in un-

**Major War Supply and Facility Contracts and Allocations, June, 1940 Through May, 1943**
**(Thousands of Dollars)**

| | Army, Navy and Maritime Commission | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Supply Contracts | | | Facilities | | Dept. of Commerce | National Housing Agency | Federal Works Agency | N.Y.A. and Office of Education | Dept. of Commerce | |
| | Aircraft | Ships | Miscell. | Industrial | Non-Industrial | C.A.A. | F.P.H.A. | | | R.F.C. | Total |
| Alabama | 869 | 360,698 | 365,075 | 385,825 | 153,239 | 1,414 | 47,701 | 20,565 | 10,084 | 7,690 | 1,353,160 |
| Arkansas | ..... | ..... | 55,785 | 233,153 | 123,458 | 1,204 | 20,210 | 4,742 | 5,055 | 690 | 444,297 |
| Dist. of Col. | 70 | 689 | 7,101 | 28,989 | 72,473 | 125 | 45,630 | 11,417 | 1,797 | 50,167 | 218,458 |
| Florida | 1,546 | 407,051 | 66,924 | 58,125 | 485,980 | 15,072 | 32,102 | 34,029 | 8,276 | 7,838 | 1,116,943 |
| Georgia | 344,376 | 153,504 | 347,559 | 101,864 | 262,566 | 4,322 | 31,792 | 13,359 | 9,665 | 3,935 | 1,272,942 |
| Kentucky | 204,430 | ..... | 175,596 | 215,444 | 149,533 | 3,247 | 10,472 | 11,623 | 8,553 | 40,905 | 819,803 |
| Louisiana | 167,602 | 309,067 | 79,292 | 336,076 | 243,999 | 2,209 | 7,634 | 16,753 | 7,147 | 42,997 | 1,212,776 |
| Maryland | 1,386,911 | 365,900 | 1,121,216 | 205,635 | 231,685 | 1,006 | 78,700 | 15,370 | 5,099 | 17,572 | 3,429,094 |
| Mississippi | 712 | 223,770 | 70,110 | 46,734 | 191,402 | 1,019 | 19,022 | 10,978 | 7,762 | 381 | 571,890 |
| Missouri | 444,420 | 51,070 | 1,221,919 | 506,596 | 149,628 | 3,267 | 16,372 | 16,582 | 8,689 | 6,470 | 2,425,013 |
| North Carolina | 20,043 | 229,185 | 391,021 | 44,867 | 336,784 | 4,012 | 31,326 | 17,485 | 8,431 | 915 | 1,083,969 |
| Oklahoma | 873,155 | 60 | 101,386 | 213,347 | 237,352 | 2,595 | 6,617 | 9,600 | 9,170 | 592 | 1,453,874 |
| South Carolina | ..... | 25,275 | 195,586 | 42,727 | 142,127 | 3,353 | 25,118 | 25,822 | 4,594 | 200 | 464,802 |
| Tennessee | 288,458 | 15,279 | 448,845 | 264,697 | 201,776 | 120 | 10,323 | 9,468 | 8,102 | 1,754 | 1,248,922 |
| Texas | 1,198,939 | 1,041,968 | 436,838 | 865,576 | 826,991 | 10,624 | 82,673 | 43,304 | 20,685 | 6,872 | 4,534,470 |
| Virginia | 1,764 | 702,597 | 217,508 | 209,403 | 543,349 | 910 | 150,920 | 33,106 | 7,332 | 2,523 | 1,869,412 |
| West Virginia | ..... | 30,479 | 244,984 | 264,820 | 15,278 | 1,770 | 8,336 | 5,746 | 9,164 | 429 | 581,006 |
| South | 4,933,295 | 3,916,592 | 5,546,745 | 3,965,878 | 4,367,620 | 56,269 | 624,948 | 299,949 | 139,605 | 191,930 | 24,100,831 |
| United States | 35,195,589 | 19,019,330 | 60,007,163 | 15,554,646 | 12,027,713 | 133,198 | 1,915,364 | 740,818 | 440,764 | 1,165,189 | 146,199,674 |

"Aircraft" includes contracts for airframes; airplane engines, propellers, and other parts; and certain related equipment such as parachutes and aircraft pontoons, armaments, instruments, and communication equipment are excluded. "Ships" include contracts for the construction of new vessels of all kinds; the purchase of used ships; and ship conversion, recommissioning, and repair. Propulsion machinery (when separately contracted for), armor, armament, navigation and radio equipment, parts, and materials are excluded.

disclosed quantities for aircraft and other purposes will, when the war is over, be used extensively in consumer goods both new and old. As such, processing industries utilizing aluminum should find the South a suitable place to locate.

# AIRCRAFT

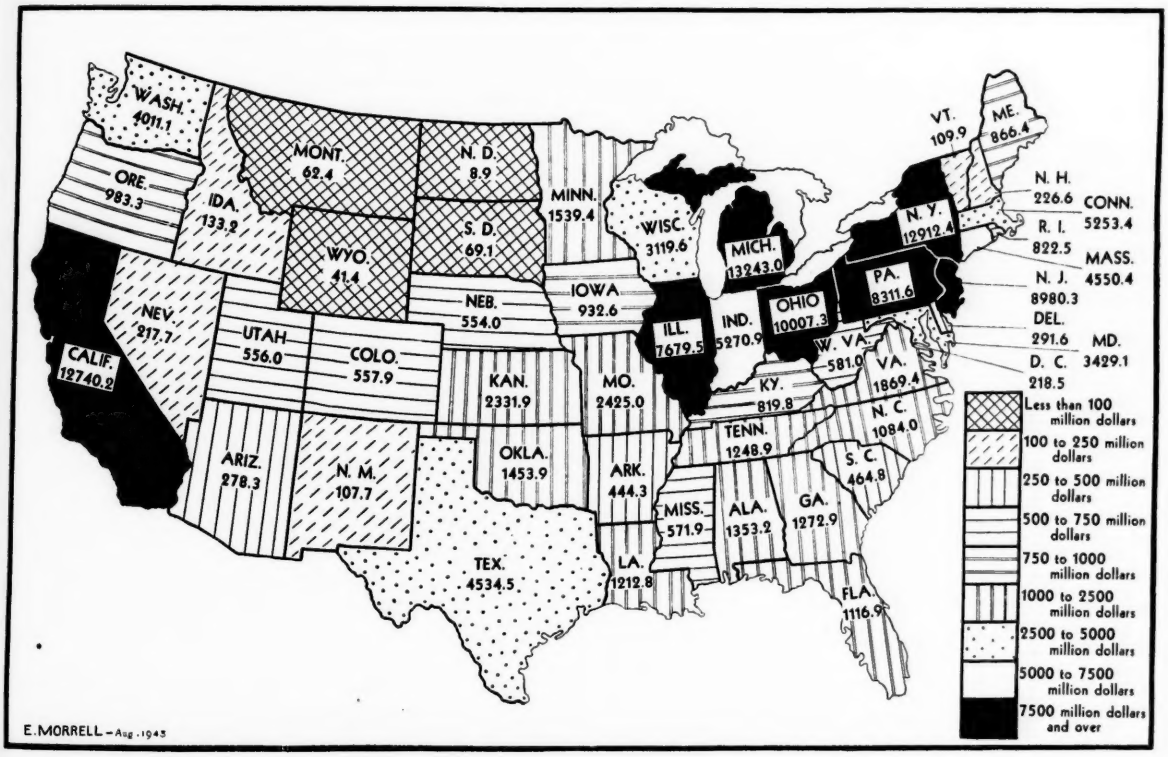
With $4,933,295,000 in contracts, the manufacture of aircraft stands as the largest producer of war equipment in the South. Though it was in the South, at Kittyhawk, North Carolina, that airplanes first saw the light of day, commercial airplane manufacturing is the youngest of this region's major industries. Actually, when the war started the number of such plants in the South could be counted on the fingers of one hand and employed a total of less than 20,000 people. Today, only three years after the start of our defense program, airplane manufacturing is a major industry in nine southern states and five other states of the South have received aircraft supply contracts. Several of the plants, some only just getting into production, have an individual employment double that of the entire South in this industry before the war. Also, several of these plants are so huge as to justify the use of superlatives. One plant in Texas recently added an extra building in which to produce its own parts. This building, though smallar than the main assembly building, was equivalent to about ten

Courtesy Consolidated Aircraft Corp.

***View of the main assembly floor in a Texas airplane plant where four-engine bombers are constructed.***

city blocks and cost $14,000,000. Another of these airplane plants now nearing full production in Georgia is described in part as follows: "The main assembly building is large enough to house the nation's total annual cotton crop of more than 10,000,000 bales; nearly a mile of freight cars can be spotted inside or a number of football games could be played simultaneously in the main assembly bay, while several three-ring circuses gave performances. The project

***$24,100,831,000 is the value of war contracts and allocations to Southern States from all Federal Agencies and Allied purchasing missions through May, 1943. This does not include contracts for foodstuffs nor those having a value of less than $50,000. Totals for each state are shown in millions of dollars in map below.***



has absorbed enough structural steel, lighting, heating, ventilating, paving and drainage materials to build a city. The fuel storage pits are big enough to require a bulldozer to shape-up the coal stacks." Yes, this plant which cost more than $60,000,000 is even bigger in some respects than the one at Willow Run, and will employ over 30,000 people in the job of assembling long-range bombers for the Army.

Other plants of somewhat similar size can be found in Alabama, in Oklahoma, in Maryland and several in Texas. Smaller ones dot the South from Maryland to Florida, from North Carolina to Texas. The speed with which these plants are built can be seen from the fact that a $14,000,000 project in Alabama was completed and in operation 60 days after ground was first broken.

The South evidently has reason to look forward to a post war future that will include a major participation in the nation's aircraft industry. The huge expansion and improvement of the South's airfields and commercial air routes—domestic and international, will be of material aid.

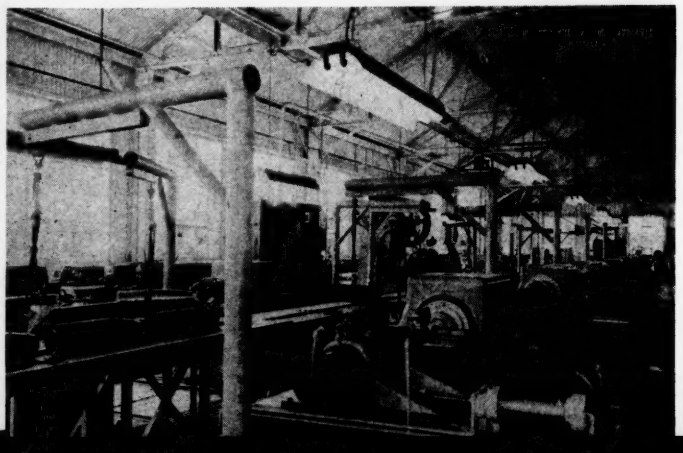
# MUNITIONS

Because of its proximity to the Atlantic and Gulf coasts, its cheap power and its stockpile of necessary raw materials, the South occupies an important place in the shell loading and explosives category and boasts many new shell loading plants.

Most of the big powder and explosive manufacturers have plants in this region. One of the biggest names in chemicals, most of whose southern plants have received the Army-Navy "E," is represented with the largest new plant, just completed at a cost of $120,000,000, making powder and chemicals. Many other large chemical companies operate plants in the area, utilizing such raw materials as seawater, phosphate rock, cotton, turpentine, and a host of other local products in turning out phosphorous for tracer bullets, incendiary bombs and smoke screens, calcium carbide for synthetic rubber, ammonium nitrate, and gun cotton.

In addition, large and small concerns throughout the South are busy making bombs, shells, guns, torpedoes, tanks, bullets and grenades. Often, these products are far divorced from the normal peace time goods and demonstrate the ingenuity and versatility of these southern concerns. For instance a well-known rubber organization operates a shell loading plant and one for producing calcium carbide. Another leading rubber company makes gun tubes while other shell loading plants are operated by a famous soft drink company and a prominent soap and vegetable oil manufacturing concern.

*A Texas shell manufacturing plant.*



Truly it would be difficult to think of a single item, from ships or airplanes to clothing, food or ammunition, required by our fighting forces, that is not being made in the South today. Virtually every one of these items, like most of our new developments, is based on available raw materials. When our supply of natural rubber was cut off, various synthetic types went to fill the breech and nearly all of these gigantic plants were built in the South—because of the nearby supply of ample raw materials.

# SHIPBUILDING

In dollar volume, the South's shipbuilding contracts approximate $3,917,000,000 and nearly $300,000,000 has been spent in shipyard construction. With a shoreline of nearly 3,000 miles, considerably more than half that of the entire United States, it is not surprising that ship construction should account for such a large proportion, over 28 per cent, of the South's war supply contracts.

Although shipbuilding is not a new industry in the South, its present scope is greater than at any time in the past. Ships of one kind or another are being turned out in thirteen southern states including the inland states of Tennessee, West Virginia, and Missouri. Shipyards dot the coast all the way from Baltimore, Maryland, down around Florida, and over to Corpus Christi, Texas. There are shipbuilding plants in or adjacent to more than 35 cities while all over the entire South other manufacturers produce parts for ships ranging from steel plates and timber, to furniture, linen and engines.

A total of about 50 privately owned yards is employed by the Navy in the manufacture of ships, boats, parts and equipment. Twenty-six plants of the South are engaged in building ships for the Maritime Commission and still others are employed by the Coast Guard and Army.

Many types of ships and boats, ranging from battleships, aircraft carriers and Liberty ships to barges and life boats, are being built. An especially large number of small boats, including army tugs, rescue boats, assault boats, lighters, minesweepers, steel, wood and concrete barges, oil tankers and P. T. patrol boats, are being produced.

In some places, self-propelled barges and other small landing craft are manufactured as much as nearly 1,000 miles from the nearest salt water. Thus the South's extensive inland waterways are playing an important role in war production.

A complete list of the number and kinds of vessels constructed in the South would, if security measures

Courtesy Ingalls Shipbuilding Corp.

***This 18,000-ton ship, built in the South's first yard to employ only all-welded construction, and now an Army transport, was originally designed as a luxury liner, costing $7,500,000. Ore for the steel in this Mississippi hull was mined in the hills around Birmingham.***

did not prohibit, read more like part of a nautical directory. As it is, most Navy construction cannot be discussed and even some other shipbuilding ventures may not even be mentioned. We are permitted to say that up to August 1, 1943, 557 E C-2's, or Liberty ships as they are more popularly known, have been completed and 424 more are contracted for; 30 special ships, 6 passenger cargo ships and one passenger ship have been completed; of 121 tankers, 74 have yet to be completed and 33 more are to be converted from Liberty ships. Other ships include: C-1 cargo vessels—26 completed and 25 more being built; C-2 cargo vessels —20 completed and 79 contracted for; C-3 cargo vessels—32 delivered and 52 still to be launched; 25 coastal cargo ships, 24 self-propelled concrete barges and 6 refrigerator ships are still to be built as well as 24 tugs. Eighteen of the latter already have been completed.

In addition to the shipbuilding plants there are, of course, many other shipyards on the coast and rivers doing a valuable job in reconditioning, converting and repairing ships. This alone is a tremendous job which coupled with the building of new ships, calls for a steady stream of materials and parts from suppliers and subcontractors throughout the whole South.

That the southern shipyards are performing up to the highest schedule can be seen from the fact that of three Eagle pennants awarded by the Maritime Commission, two have gone to the South. In Navy shipbuilding, one Florida yard launched seven vessels in one day. What these facilities for building ships will mean to postwar industry is that shipbuilding will not come to a sudden end with cessation of hostilities, for already production is being geared to conversion for peacetime ships and recent contracts are looking to this end.

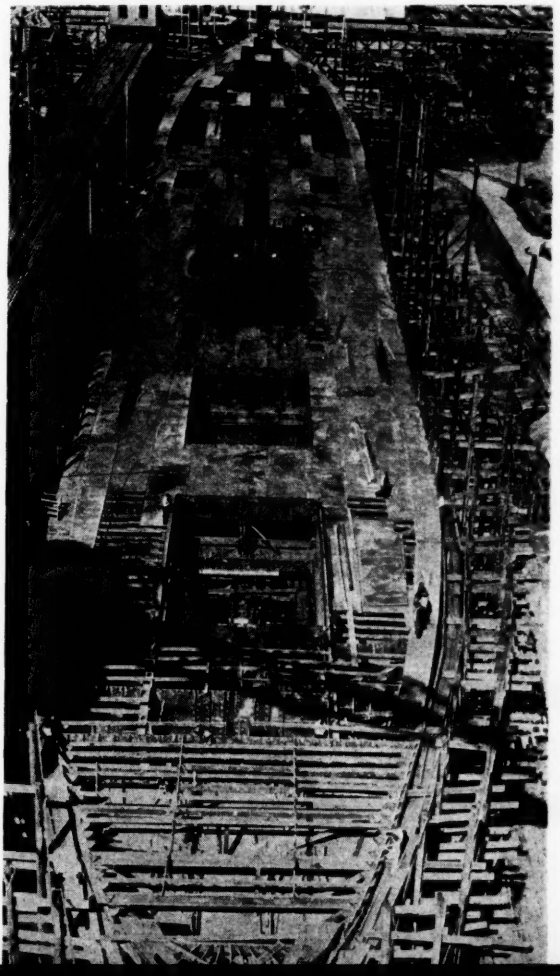
# TEXTILES

Textile manufacturing is almost synonymous with the South, consequently it is not surprising that textiles should rank high among the South's war supply contracts.

More than 90 per cent of the South's textile mills are working on government orders. They are turning

***A C-3 cargo vessel in course of construction for the U. S. Maritime Commission at a Virginia shipyard where aircraft carriers and battleships are built.***

Courtesy Newport News Shipbuilding & Drydock Co.



out cotton duck for tents and protective coverings for machinery and other equipment, jungle packs, dispatch cases, sleeping bags, sheets and pillow cases, blankets, towels, work clothes, uniforms, bandoleers, camouflage netting, nylon parachutes, fabrics for tires, wing covers for airplanes, motor warm-up covers, bomb parachutes, mosquito netting, cotton webbing, haversacks, barrack bags, underwear and socks, handkerchiefs, gloves, bandages, and scores of other items.

Regional war supply contracts for the long list of textile necessities total close to one billion dollars.

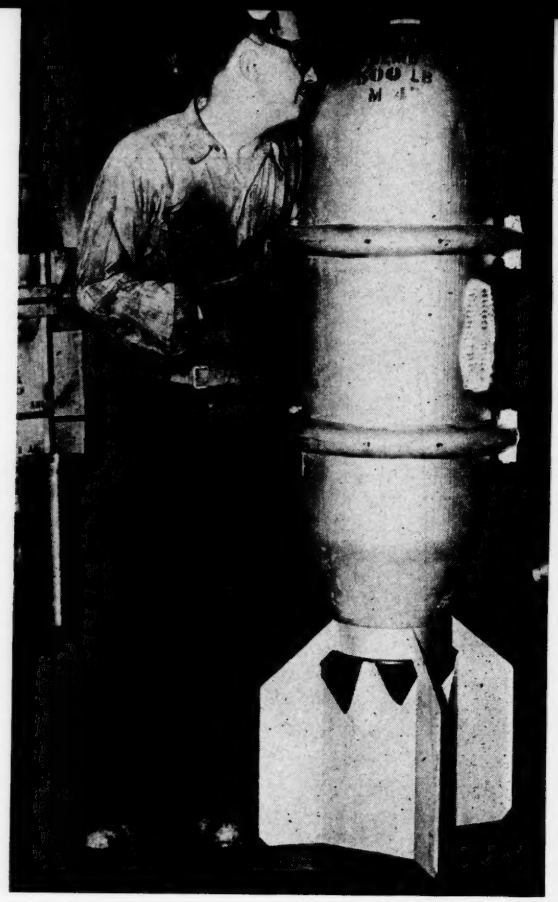
# CONVERSION

Although most cotton, rayon and other textile mills have been able to turn to war production with comparatively small changes and adjustments, there have been some interesting cases of conversion. Fortunately, however, these problems never reached the proportions they did in some parts of the country because a majority of southern industry was already essential.

A concern making automobile seat covers is now engaged in the manufacture of asbestos aprons for the Chemical Warfare Service while a mill previously making hosiery is now producing aircraft parts.

The largest producer of mechanical pencils in the country, a southern concern, is now completely engaged in war work, making bomb parts and precision parts for aircraft. The chenille bedspread industry in northern Georgia makes mosquito netting and other goods for troops overseas. An ex-automobile dealer and a banker combined forces and organized five groups of people, of which the largest totaled 500, to garnish camouflage netting. These groups, doing the work by hand, have stepped-up production of this important item 60 per cent. Furthermore, the operation was set up in communities where unemployment situations were thus relieved.

The stitching trade industry of Missouri is now producing pup tents and haversacks instead of awnings—military uniforms and clothing instead of civilian goods. One St. Louis firm which formerly manufactured heating equipment converted to manufacture flexible landing mats which are unrolled on distant airports where fields are apt to be rough or boggy.



U. S. Army Signal Corps Photo

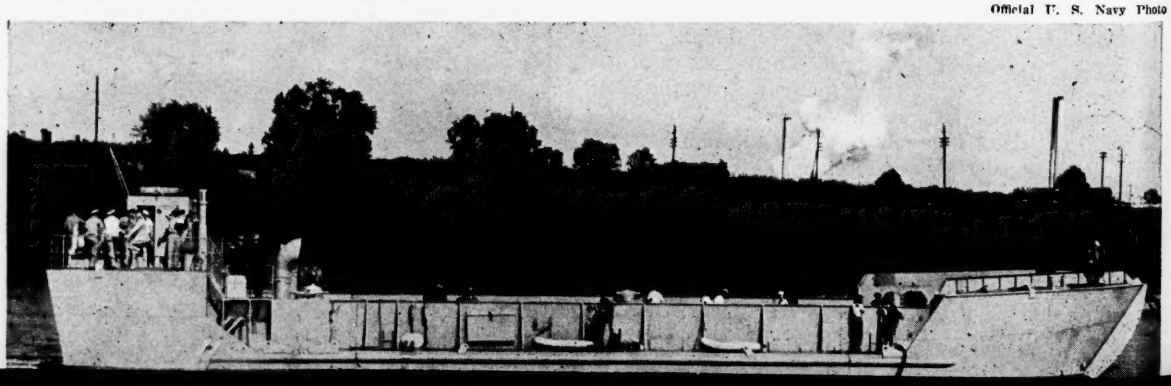
***A company which in normal times made steel roofing and shingles is today producing bombs and bomb-fin assemblies.***

A Virginia rayon company is using its drying equipment to good advantage in food dehydration and other manufacturers have followed a similar pattern —from furniture to wooden airplane parts, from rugs to duck, from watches to precision instruments, from steel roofing and turpentine cups to bombs and bomb-fin assemblies.

Plants everywhere in the Southern States, large and small, have met the need of the war and are contributing their utmost effort to victory. If the goods they normally made were required by the armed forces, then they increased their output, improved the product and took on extra work wherever possible. In other instances, like the shoe industry, production was changed from civilian to Army-Navy needs. Lastly, there were those concerns who were unable to obtain needed materials or whose products were nonessential. These unhesitatingly made a complete conversion.

***Southern plants' main concern has been, and still is, to produce for victory. Below is shown a landing boat built for tanks, troops and other equipment. These are being produced at several small coastal and river yards where previously pleasure and river vessels were built.***

Official U. S. Navy Photo



Where plants were too small to obtain prime contracts or were unable to act as subcontractors, they frequently formed a pool, as they did in one part of Virginia, to take jobs they could handle collectively. By and large, however, aggressive small plants have had little difficulty. A large number of small shops scattered in rural areas throughout the South have not converted to war work because they have been kept too busy repairing farm machinery and equipment.

A not uncommon occurrence has been the skyrocketing from small to large manufacturer. In Arkansas a woodworking factory was about to close down because it had been unable to get war work. Engineers undertook to find substitutes which the firm was capable of making for rubber floats and balsa wood floats in life rafts, life preservers, and floater nets. Experiments with the lightest wood obtainable in the territory and with air cell construction proved so satisfactory that the plant was awarded a Navy contract for floater nets for more than $500,000. In another case, a scissors manufacturer on the verge of closing, received a Navy contract for 547,000 pairs of nine-inch shears.

# MATERIALS

In addition to the more than $14,396,632,000 of war supply contracts, consisting principally of manufactured goods, the South also is making an immense and valuable contribution to the war effort as a supplier of materials—both agricultural and mineral.

### Cotton and its By-Products

In the production of the chief material used by its textile industry—cotton, the South holds a pre-eminent world position. Fourteen southern states currently are raising cotton and the combined crop in 1942 amounted to more than 12,097,000—500 lb. bales. This year it is expected that the production will approximate 11,930,000 bales.

***Besides its contribution to textile products needed by the armed forces, cotton is vital in actual combat. Below, a powder charge—largely made from cotton is placed in the gun after the projectile.***

U. S. Army Signal Corps Photo

***Cotton picking machines at work in the South, where this year it is expected that the crop will approximate 11,930,000 bales.***

About 70 per cent of the total cotton production last year went into war uses. The Army alone buys about 11,000 different cotton items ranging from gun camouflage to handkerchiefs. In contrast to 20 pounds of cotton bought annually by the average civilian, it takes 250 pounds to equip a soldier.

Textile production doesn't tell the whole story of cotton at war. By-products of cotton, such as fertilizer ingredients, cotton-seed oil and livestock seed are almost equally as important.

Cellulose in the form of cotton linters—another important cotton derivative—goes into explosives as well as into plastics, rayon, lacquers, and numerous other wartime necessities.

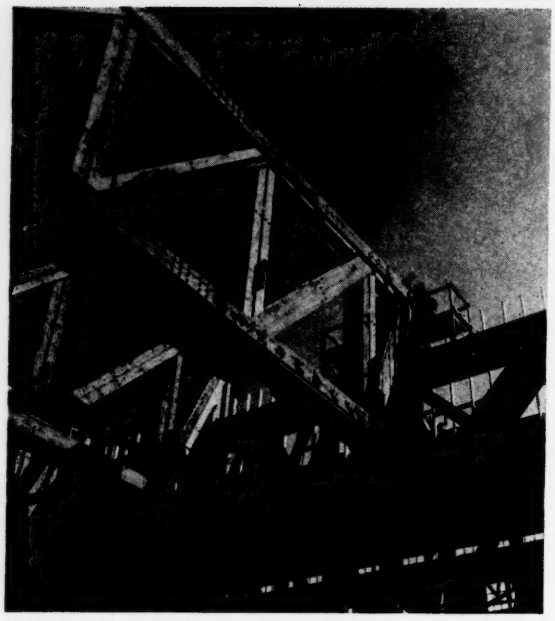
The cottonseed oil industry is especially necessary today to replace vegetable oils formerly imported from abroad.

The South's forests is another source of materials which are taking a more and more vital part in war production. War uses of wood and its many derivatives and adaptations are developing at a phenomenal rate.

### Lumber and its Products

According to preliminary reports, the South produced 15,156,000,000 board feet of lumber in 1942—about 43 per cent of the total lumber production in the United States. Of the 30 recognized commercial species of lumber in this country, 23 are found in the South. Southern, or yellow pine predominates to the extent of 75 per cent of the total production.

Southern woods are being substituted for steel in the construction of cantonments and manufacturing plants, in railroad construction, for ship decking, and other shipbuilding needs. Laminated wood arches and other construction utilizing short lengths that otherwise might go to waste, are as strong as steel in numerous industrial structures. Similarly, bits of scrap are being glued together to make standard-size boards for shelving, and short pieces are used to make tent pegs.



Courtesy The Austin Company

***Southern woods are being substituted for steel in the construction of cantonments and manufacturing plants. Laminated wood arches and other construction utilizing short lengths that otherwise might go to waste, are as strong as steel in numerous industrial structures.***

Southern timber is used for boxes and crates, for packaging munitions and other implements of war. Contracts awarded in this region for wood ammunition boxes, crates, military lockers and furniture exceed 35,000,000 units. This is in addition to the lumber for making millions of the same articles which has been shipped from this to other sections.

Yellow poplar, a southern hardwood, is one of the woods used in constructing aircraft, in the form of both lumber and plywood. This material is satisfactorily employed in gliders, transport planes, and even fighter craft.

The South is an outstanding producer of furniture, especially North Carolina and Virginia. As a result southern factories recently received a substantial order for furnishing war-worker homes being erected by the Federal Public Housing Authority. They have also been making large quantities of double-decker bunks and other barracks furniture. On the other hand, some southern furniture factories have converted to straight war production, such as plane assembly, gun stocks, pontoons and truck bodies.

## Naval Stores

Another forest product, exclusively southern which has gone to war is naval stores. Turpentine and rosin, with their components and derivatives, figure in many industrial fields including shipbuilding, drugs, chemicals, plastics, paints for war equipment, and—a new development—in synthetic rubber manufacturing.

Synthetic camphor, derived from turpentine, is used in photographic film and other products while pine oil, another turpentine product, is used in large quantities as a flotation agent in mining the zinc, copper, lead and molybdenum needed for war.

Other products the South is extracting from wood are alcohol, tars and lubricants. Explosives, paper, rayon and plastics are by-products of wood cellulose. All are vital in the successful prosecution of the war.

Cotton and timber are by no means the only industrial crops of southern agriculture. Those exclusively industrial include hemp grown mainly in Kentucky and tung nuts which are produced throughout a belt extending across most of the deep southern states. These latter are a source of oil valuable for its drying properties in paints and varnishes and other protective coatings applied to war equipment and supplies. It is used also in the manufacture of synthetic resin and for treating food container linings.

Bridging the gap between industrial and food crops are many items for the list of southern agricultural products is a long one. Among the more plentiful is the peanut, also an exclusively southern product whose food and oil content (it yields up to 50 per cent oil) are already well known. Still another is the soya bean, valuable alike for its oil and protein content.

Last, but by no means least, are those crops primarily grown for their food value.

A search of the war supply contracts lists won't turn up any figures on either fruit or vegetable production despite their obvious importance to the military and civil population. Yet food processing plants, old and new, are working overtime preparing canned, dehydrated and concentrated fruits and vegetables in

***Rayon, a product of wood cellulose and cotton linters, is like cotton, playing an important part in the war. One outlet, taking large quantities of both these textiles, is cord for bomber and other airplane and automotive tires.***

addition to those sold for market. Florida citrus fruit juices are especially in demand, being shipped in concentrated form to our armed forces and to prisoners in Axis countries. The latter, like sugar cane grown only in Florida and Louisiana, provides an excellent example of how completely agricultural crops are utilized. After the juice is extracted, the residue is treated and made into cattle feed. But even then there still is something left; in the case of the citrus fruit the remaining liquid is a source of industrial alcohol and with sugar cane, the bagasse is used for making wall-board.

Before leaving agriculture, mention must be made of tobacco, one of the South's most important crops. This is a "must" in emergency ration kits and is as morale essential to the armed forces as are the letters from home.

### Minerals and Chemicals

The enormous demand for raw materials needed in the war effort and as substitutes for those items previously imported from abroad has resulted in a record production of minerals and chemicals. In 1942 the South produced more of these products than at any time in its history, the minerals alone being estimated at $3,153.000,000, which is between 40 and 45 per cent of the entire country's output. What the exact figures were for tonnage and values probably will not be released till the war's end—certainly in so far as some particular items are concerned. Meanwhile still larger values, and possibly quantities, are anticipated for 1943.

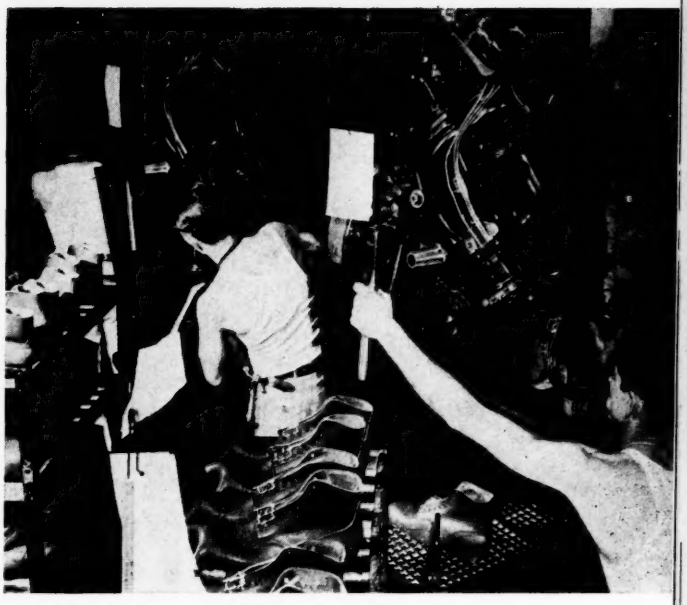
Nearly all of the mineral products which go into tanks, planes, guns, ships and other weapons with which to fight the Axis were turned out at unprecedented rates. Output of bauxite and magnesium for the light metals largely produced in the South and so greatly in demand for making warplanes, increased several fold. Iron ore and pig iron—the backbone of the vital steel industry, reached new levels and the production of ferro-alloys increased similarly. So the record continues through the long list of metallic and non-metallic minerals and fuels produced in the South.

A complete list of all the minerals currently being produced commercially in the South makes an imposing array, and it is just that.

### The South's Minerals Form the Basis of Enormous Chemical Industry

Yes, the national war effort would be a very much more difficult problem if it were not for the South's minerals, which represent a considerable industry in every one of the southern states. They are important not only for their immediate, direct use but also as the basis of an ever expanding chemical industry. And if, as it has been said, chemicals are the life blood of all industry in peace and we are doubly dependent on them in modern war, then the South does indeed supply much of the nation's life blood.

Every one of the southern states is a producer of

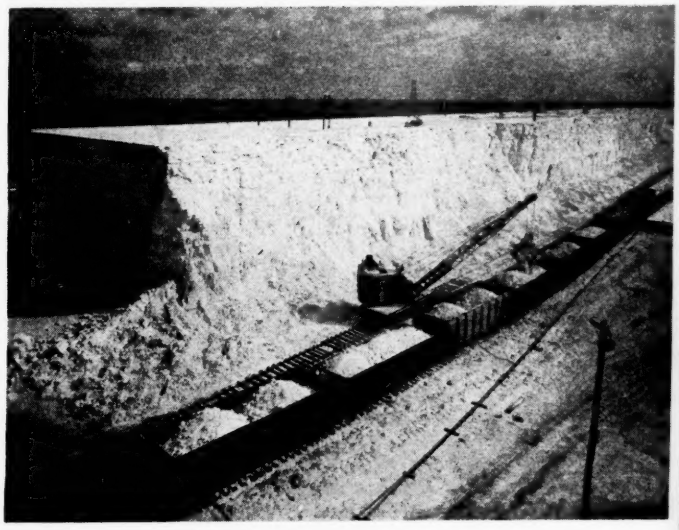


***Another important agricultural product is animal hide. Above is shown part of a Tennessee shoe factory using leather prepared in the South.***

chemicals contributing to a chemical process industry whose output even before the war amounted to nearly $968,000,000 or almost 30 per cent of the national total.

Of 86 minerals listed by the Bureau of Mines, southern states led in the production of 26 and other southern states held 59 ranking positions in 49 of these 86 minerals. Many of these are among the nation's most important minerals. Take the basic raw materials needed for the manufacture of 150 of the most important industrial chemicals. These comprise a group of only 33 minerals. Eleven of them are either

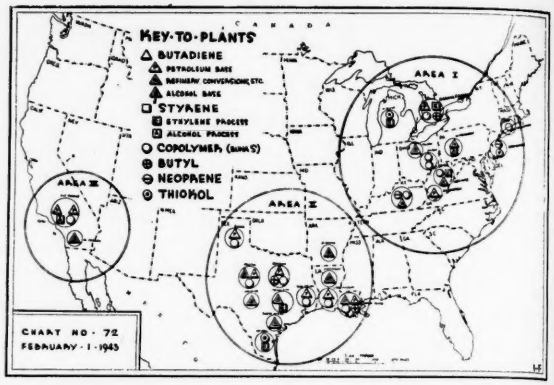
***Ninety-nine per cent of the nation's sulphur comes from the South and is the basis for a tremendous chemical industry so important that it is said every single industry is a user.***
Courtesy Freeport Sulphur Co.



common (like sand and limestone) or not available at all. Of the remaining 22 minerals, southern states are the leading producers of 12 and are ranking producers of 20—including the ten most important ones, and of these ten most important minerals, southern states lead in the production of 6 and hold 13 additional ranking positions.

The minerals from which these chemicals are derived include most of those produced commercially and it would be virtually impossible to select those which are most important. Many of them are of course well known like coal, whose chemicals derivatives are counted in the thousands and accounts for approximately 20 per cent of the coal production. Then there is sulphur of which it is said that every single industry is a user. Another vital source of a wide range of chemicals is in petroleum and natural gas with their seemingly endless list of hydrocarbons. But other minerals also are equally as important though their chemical offspring frequently are either commonplace, such as lead and zinc oxides, or they have proved unsuitable for dramatization in the public eye, as in the case of spodumene which is a valuable source of lithium.

A complete list of the chemicals made in the South would read more like part of a technical lexicon for it includes such a wide range of acetates, acids, alcohols, carbonates, bromides, chlorides, chromites, cyanides, fluorides, hydroxides, iodides, lactates, nitrates, phosphates, resinates, stearates, sulphates, sulphides, sulphites and tartrates. These are in addition to such natural chemicals as sodium compounds and titanium minerals.




***Circular symbols show location of synthetic rubber plants. Butadiene and styrene are the two principal ingredients for making the latex. Styrene plants are marked with squares and butadiene plants with triangular symbols.***

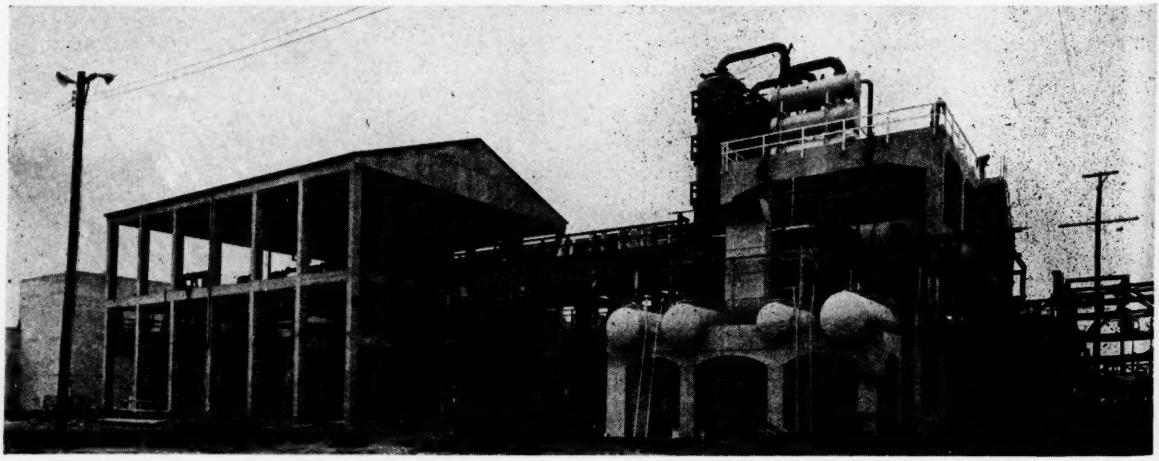
## Major Part of Nation's Synthetic Rubber Plants Located in the South

An example of the nation's appreciation of, and dependence upon the South's chemical industry is seen in the synthetic rubber program which is based almost exclusively upon chemicals as raw materials derived from mineral and agricultural sources. Of 20 synthetic rubber plants in course of construction or already in production, 12 are located in the southern states. To supply these plants with one of the most essential ingredients, 17 butadiene plants will shortly be in operation using alcohol, petroleum or some similar product as a base. These plants are entirely separate from three styrene plants employing the ethylene process. The southern states so far participating in this essential new industry are Arkansas, Kentucky, Louisiana, Texas and West Virginia.

But great as the production of minerals, agricultural products and their chemicals has been in the South, there is no doubt that far greater quantities will be produced in the years to come. Based upon these raw materials a vast industrial empire will grow, bringing in its train consuming industries that will manufacture those wonder "products of tomorrow" which help to make the family life of this country so well "worth fighting and working for."

***Texas moves closer to being the nation's leading synthetic rubber producing state as a giant 60,000-tons-a-year plant is completed near Houston this month. Financed by the government through the Defense Plant Corporation, the plant consists of 52 buildings and occupies over 400 acres. Construction started less than one year ago. Pictured below is one of the two units of reactor tanks where the styrene and butadiene are mixed to produce latex which moves to another building for coagulating into synthetic rubber.***

Photo by courtesy Goodyear Rubber Company and George A. Fuller Company



# South's Agriculture Achieves Great War Record

by

**Claude R. Wickard**

*Secretary of Agriculture*

THE South's agricultural plant—with all its farms and ranches and all facilities of agriculture regarded as one vast producing unit—is doing its part to win the war.

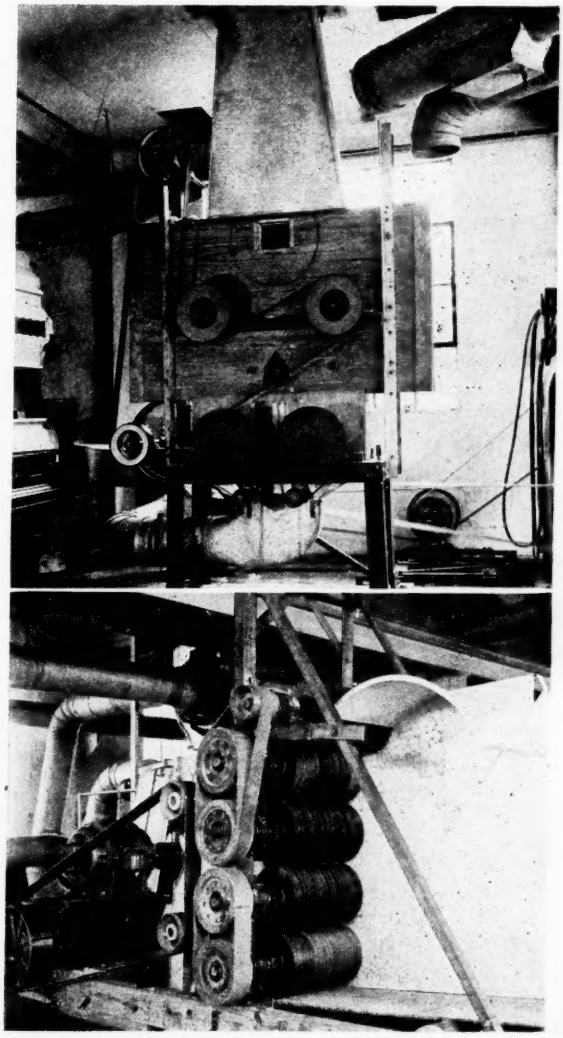
The record speaks for itself. Asked to increase their output of vital war crops and livestock, the farmers of America have broken all previous production records in each of the past four years. Prospects now indicate that the record for total production will be surpassed again in 1943. Agricultural food production—apart from other farm crops—has exceeded all previous records in each of the past six years and is expected this year to surpass the all-time record of 1942 by 5 per cent and the 1935-39 average by 32 per cent.

These home-front achievements are as important to the war effort as the great records being made by our tank and plane and ammunition plants. The Nation's fields, in effect, are factories and arsenals, too. They are producing the food and fiber to keep our fighting men strong and to back the fighting power of our allies. By maintaining and increasing production for wartime needs, the farm people are helping crush the Axis aggressors and hastening the day of final victory.

These farm people have shaped their operations to meet the goals of the national food program and have cooperated whole-heartedly with the U. S. Department of Agriculture and the county war boards. For its part, the Department has thrown its entire resources and facilities into the war effort, concentrating on aid to farmers and the development of new methods and techniques to meet war needs.

All the major agricultural regions have made significant contributions to the war effort in various ways. In the South, for instance, tremendous increases in peanuts and soybeans have helped the country take care of war-imposed shortages of vegetable oils. Outstanding gains also have been made throughout the Southern region in dairy and poultry production and in practically all food and feed crops.

The expansion of the peanut crop in the South is an outstanding example of effective farm cooperation. This year's peanut acreage is about 22 per cent greater than that of 1942. The region is growing well over 4 million acres of peanuts in 1943, supplying vitally needed oil, food, and feed, compared with an



***Because the war is using up enormous quantities of cotton linters which are needed in the manufacture of smokeless powder, it was essential to have a substitute available in case the linter supply should run short. To meet this possible emergency, a machine has been developed for converting great quantities of ordinary lint cotton into linters in a short time. At top right is shown a side view of the cutting machine while the lower picture is an interior view of the feeder with one side removed, showing feed belt, saw blades, Ricker cylinder and curved deflector; the saw brushes are obscured.***

average of 1.6 million acres for the 10-year period, 1932-1941.

Sweet potato production, also largely concentrated in the South, this year is estimated to exceed the production of 1942 by 24 per cent. The 1943 production is on an acreage substantially larger than the 1942 acreage. Sweet potatoes not only are an important part of our food supply but also are assuming increasing importance as a source of high-grade white starch, replacing important root starches formerly imported from the Orient.

There has been a tremendous expansion of soybean production in the South. The crop in 12 southern states increased from an average of 1.5 million acres during the period 1932-1941, to 3 million acres in 1943 —a gain of 100 per cent.

The conversion from an established cropping system to larger acreages of war crops has not been easy for farmers. The difficulties involved have been comparable with the job of converting the manufacturing industries from peacetime to war production. In some cases farmers have planted and harvested crops with which they had not previously had any experience and for which they were not able to get all the equipment needed. Resourcefulness and patriotic determination have helped them get the job done.

In addition to these direct contributions by farmers, the scientists of the Department of Agriculture, working in scores of laboratories in Washington and scattered throughout the southern states, often in cooperation with the State agricultural colleges and experiment stations, have found many important new ways of adding to our war strength.

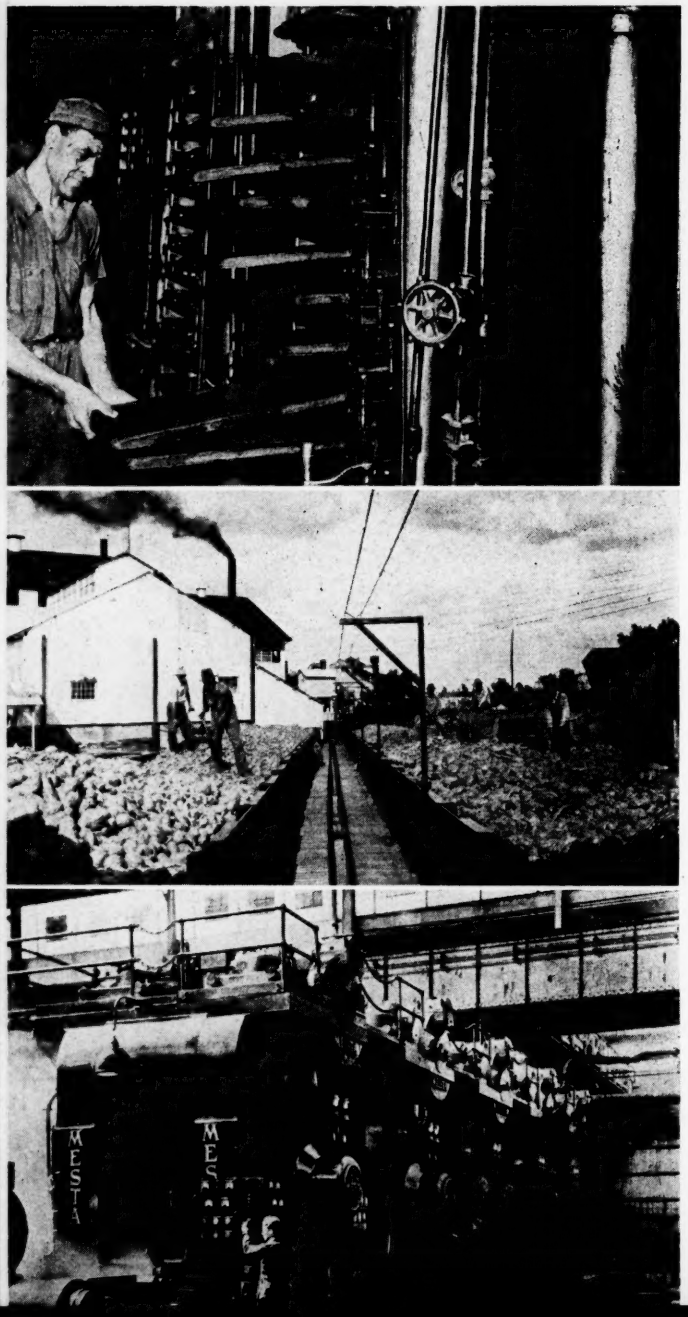
For example, the Department's New Orleans laboratory only recently announced after extended research that it had developed a method for the use of cottonseed oil as a substitute for imported palm oil in the production of tin and terne plate and in making sheet steel by the cold reduction process. The new method makes use of cottonseed oil, perhaps opening the way for a wide new use of a basic product of the South.

This development offers the tin and steel industries a readily available substitute considered actually better in some respects than palm oil. Supplies of palm oil formerly came from the Dutch East Indies.

The New Orleans laboratory also has contributed a substitute for cotton linters, used in the manufacture of smokeless powder, needed for big guns, anti-aircraft shells, and other similar uses. The war is using up tremendous quantities of smokeless powder, and as result it is important to have a substitute for linters in case available supplies are exhausted. The Department has developed a machine for converting great quantities of ordinary lint cotton into linters in a short time.

A citrus concentrate developed through the research program is now being shipped to Britain, where it is reworked into marmalade. Shipping in concentrated form saves valuable cargo space. Research also is under way on industrial alcohol, plastics, industrial proteins, essential drying oils, preservation of vegetables by dehydration and freezing, and substitutes for many products made scarce by the war. All of the projects have specific and immediate wartime application.

Every part of agriculture, from the smallest farm that is producing war crops to the world's finest agricultural research facilities of the Department of Agriculture, is now working for the same goal—victory for the United Nations. Agriculture is writing its outstanding record of achievement with the greatest production in the history of this Nation.



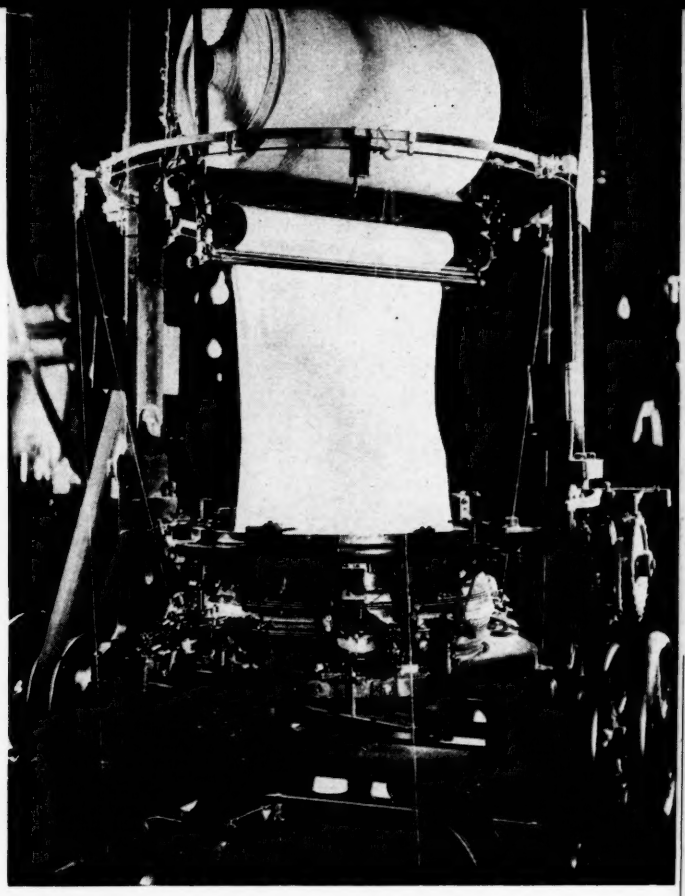
***Top—Pressed peanut cake is removed from the press in an oil mill near Raleigh, N. C. This cake, from which all the oil has been pressed, is as hard as a pine board and brittle. Center—Sweet potatoes being unloaded into bins at the Laurel, Miss., starch factory. Bottom—Commercial mill used in testing cottonseed oil proposed as a substitute for palm oil in the production of sheet steel by the cold reduction process. Note the vaporization of oil as the sheet emerges from the mill.***

# Cotton Mills and the War

by

**Hugh Comer, President**

***American Cotton Manufacturers Association, and Executive Vice-President, Avondale Mills***



***A familiar scene in many southern textile mills where cotton textile cloth is turned out at a rate of more than a billion yards per month.***

WHEN the MANUFACTURERS RECORD asked me to write a short article dealing with the effort that the cotton mills are making in winning the war, I was delighted. But when I discovered that the issue in which the article was to appear was going to be dedicated to those plants that had earned an Army-Navy "E," I was embarrassed. Our own company didn't have an "E." But now we have—the whole works—are we happy, and are we proud? And are we going to "shoot both barrels" at winning that star that comes over the horizon in about six months from now.

What are the efforts that the cotton mills are making towards winning the war? What are the industry questions that are asked? Here are some of them:

What is your production compared with your capacity?

What is your actual production compared with your scheduled production?

Are you cooperating with the war program? Are you selling your product to the armed forces? What did you do in the scrap drive?

Are the people who work in your mill coming to work? What are you doing about it if they are not coming to work? Do you use posters? Do you use speakers? Do you use committeemen? Have you worked out transportation facilities? Do you bring a chronic loafer in on the carpet and sound off? Have you checked on your lunch wagon? What are you offering for sale in your cafeterias? What are you doing about working double shifts? Have you got many of your best workers working 60-odd hours a week?

Are you having many accidents? Is your safety program at the top of your "must" list? Did you run a safety school? Have you got an efficient safety committee? Is oil and water on the floor? Bobbins lying around—nails rising out of the floor—belts loose? Who is playing with the air hose? What is the severity rate of your accidents?

What are you doing about your plant protection? Have you got guards at your gates? Is your mill locked up? Are you cooperating with the FBI?

What are you doing about all those employees that are being drafted into the Army and that are leaving to go to the ship yards and the powder plants? There are a lot of those fellows. How are you replacing them? What are you doing about training new employees? How many have you trained? Are you just depending on recruiting your labor from neighboring mills?

Are fair labor standards maintained? How is management and its employees getting on? Are you fussing and quarreling, or are you trying to work the program out together? Have you got employee committees? Are you searching the minds of the men and women who work in the mill for improved methods? Those men and women know a lot.

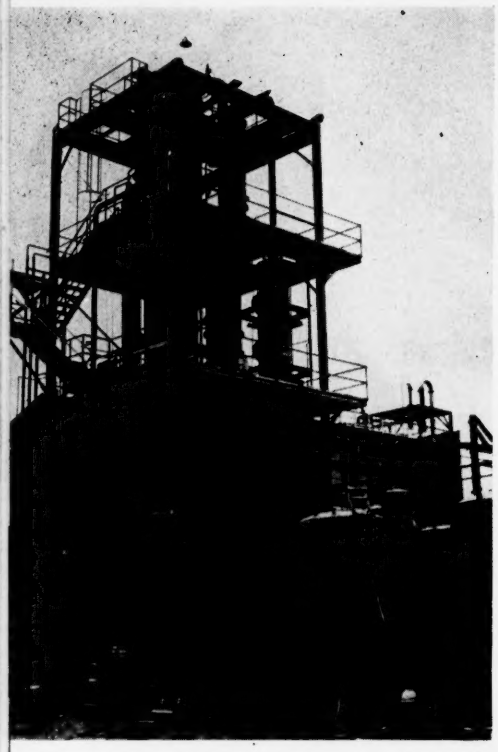
What have you done to convert your plant from peace-time to war-time production? In this connection, what ingenuity have you shown? Have you made many changes in your looms and spinning frames to take on heavy work? Did you rebuild them; revamp them; heavy them up; strengthen them up, or did you just go along like you were?

How about those overloaded motors? How about your oiling program? Did you use the same old oiling system and burn up your motors? Did your lubrication program throughout the mill get out of hand and your bearings crack up?

What did you do about your labor supply? Did you

(*Continued on page* 78)

# BOMBER NOSES NOW MADE IN KNOXVILLE



*Borrowing from current practice in the petroleum industry, the units for manufacturing the basic plastic monomer were constructed outside with only the control rooms enclosed. A type of construction relatively new to the chemical industry, thus out-of-doors unit kept new building materials to a minimum.*

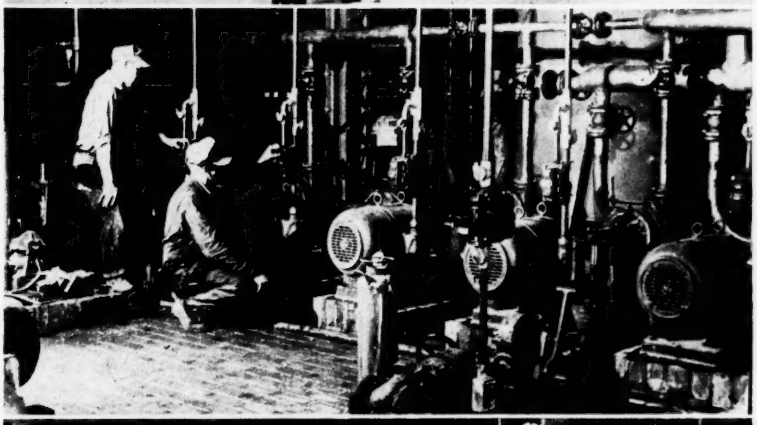
TRANSFORMED from a drab, insignificant warehouse to a modern, flourescent-lit, air-conditioned, spotless plant in 8 months, the new Knoxville, Tenn., plant of Rohm & Haas is now an important war production center. Here strategic Plexiglas is manufactured for bomber noses, gun turrets and other transparent military plane enclosures.

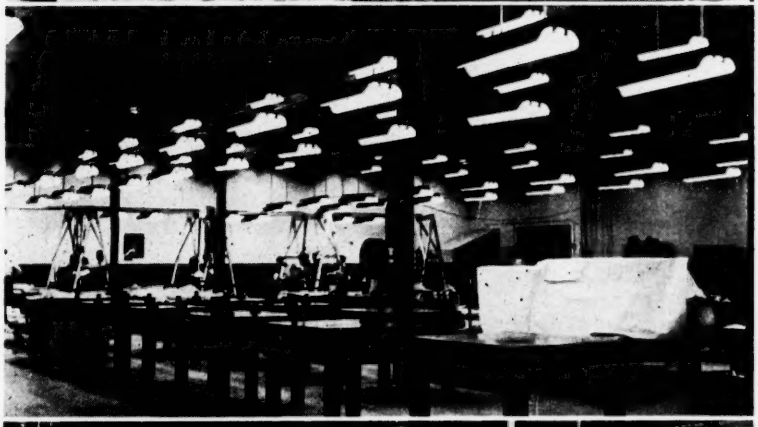
Transformation from abandoned warehouse to model plant is a tribute to the ingenuity of the company's chemical engineers. Despite its top priorities, the plastics firm was forced to equip the Knoxville plant with mostly salvaged and second-hand, reconditioned equipment.

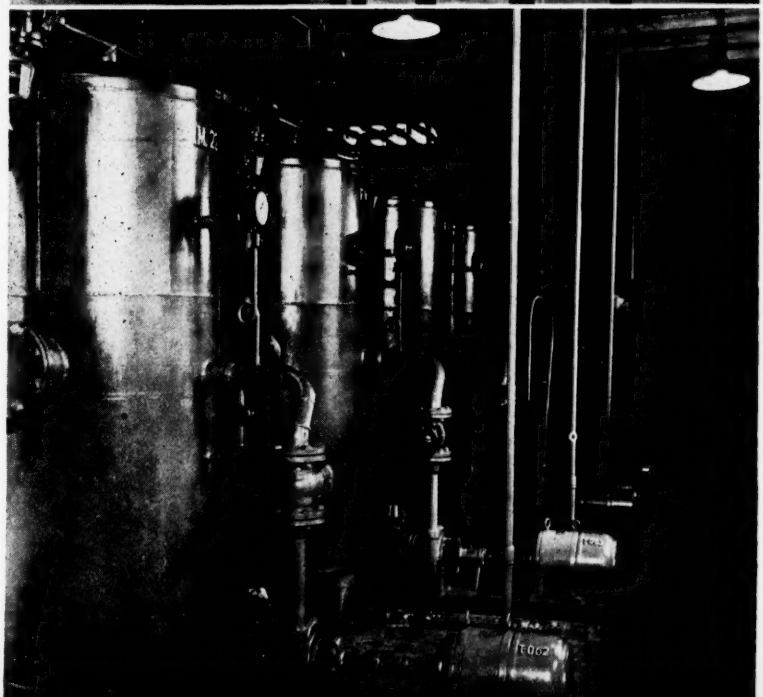
Little re-building was necessary, principally to strengthen the foundations for heavier process equipment. Lumber kilns were available for conversion into polymerization ovens. A silo, once used for sawdust, became a storage bin for a ten-day supply of coal. Lining a large underground storage tank, formerly used for wood waste, with acid-proof brick yielded an acid storage tank.

The other plant fittings were obtained from many and varied sources. A 450 h.p. boiler from the Rohm & Haas plant at Bristol was dismantled and shipped to Knoxville. Since Plexiglas must be handled with extreme care to prevent

*Finishing Plexiglas requires buffing and polishing. Soft, open types of buffing wheel, such as shown at right, are used at Knoxville. The plastic sheets must be clean and dry at the start of each buffing operation. Polishing to a mirror-like finish is done individually in well lighted rooms.*







*Top—Interior of one of the old Knoxville warehouses before conversion to a modern chemical unit for making the transparent plastic from which bomber boxes, gun turrets, and other military enclosures are fabricated. The building has played many roles since it was first built. During the last war, shells for our allies rolled off its production lines. Later, it housed the manufacture of hardwood automobile bodies. More recently it acted as a warehouse for produce and tobacco auctions, as shown above. Top center—A few of the more than 630 explosion proof motors which keep liquids flowing in the continuous process of making Plexiglas Volatile liquid intermediates giving rise to vapor which may become an explosion hazard called for explosion proof motors and special controls and lights in the manufacturing area. Where possible, conventional type starters and switches are located outside the danger areas. Lower center—To obtain high optical clarity, plant operating conditions of almost medical cleanliness have to be maintained to eliminate dust and dirt. Air-conditioning helps prevent the introduction of dust and dirt; fluorescent lamps facilitate careful inspection of the finished sheets. Workers wear white uniforms to help maintain cleanliness standards. Bottom—Copper tanks are used to prevent any discoloration of the monomer which might affect the clarity of the finished product Plexiglas monomer must be handled with extreme care to prevent premature polymerization and to avoid contamination. For this reason, stainless steel tanks are used. Seven of the stainless steel storage tanks formerly transported milk and Pepsi-Cola; eleven other tanks came from a brewery in Philadelphia.*

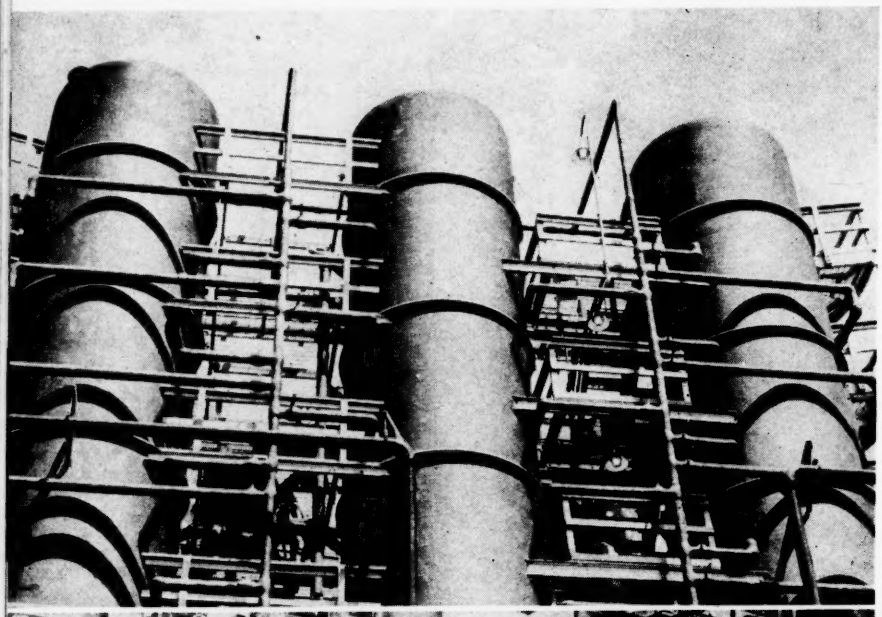
premature polymerization and to avoid dust and dirt, stainless steel equipment is necessary. Seven stainless steel tanks came from a New York dairy where they had long served in trucking milk. Other stainless steel tanks were formerly used to transport Pepsi-Cola. Eleven other tanks came from a brewery in Philadelphia. Refrigeration equipment was salvaged from several abandoned breweries in Pennsylvania. The plant is also air-conditioned to prevent contamination with dust and dirt and fluorescent lights facilitate careful inspection of finished sheets.

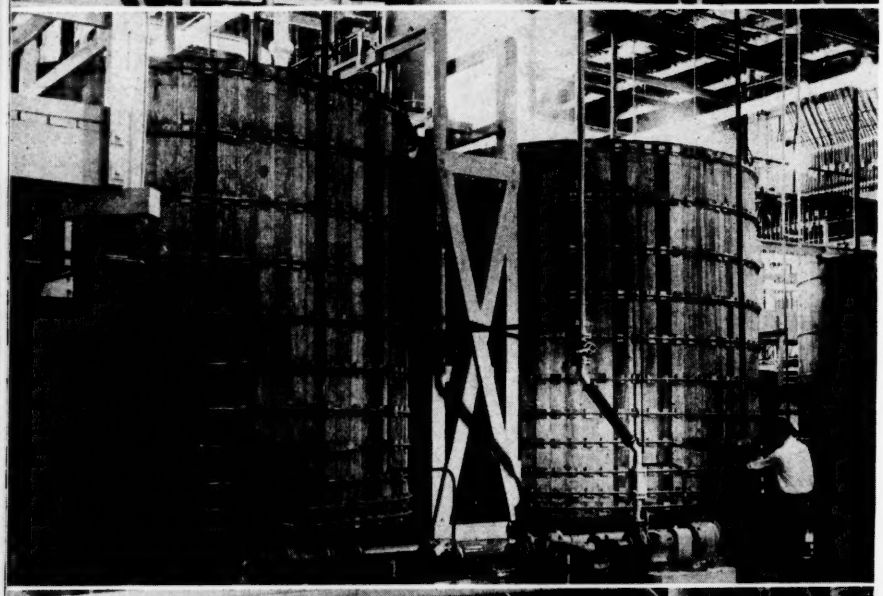
Electrical installations in the plant involve more than 630 motors which move the liquid intermediates in a continuous process. Because the intermediates are volatile, giving rise to an explosive vapor, explosion-proof motors and controls and lights are used.

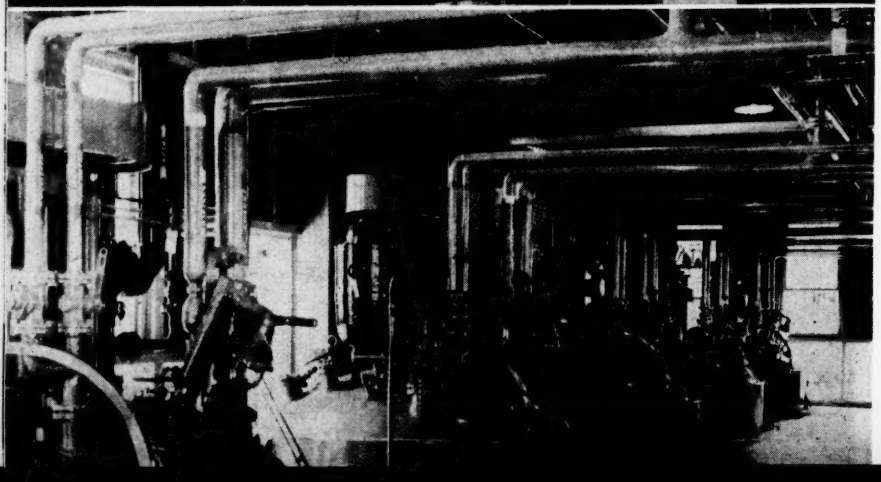
An initiation in chemical construction at the Knoxville plant is the open-type manufacturing unit where only the control rooms are enclosed, a type of construction

(*Continued on page* 80)

# Nation's Largest Synthetic Rubber Plant Starts Operations in Texas







THE nation's newest, and what will be its largest synthetic rubber plant—when in full production, was in operation today near Port Neches, nine miles north of Port Arthur, Texas.

The manufacturing establishment was built by B. F. Goodrich Company for the government and will have a total output of 120,000-tons of man-made rubber a year.

Two units comprising half the plant capacity will operate under the direction of Goodrich. The other 60,000-ton capacity will be directed by Firestone Tire and Rubber Company and will go into operation later.

At a reception in Port Arthur, August 24, signalizing the start of operations at the Port Neches plant, George W. Vaught, vice-president of B. F. Goodrich Company, said the new manufacturing establishment alone will produce nearly half as much as all of Germany's best yearly output.

Making "GR-S," as the govern-

(*Continued on page* 82)

***Top—Giant stripping columns at "Rubber Rancho," 120,000-ton capacity synthetic rubber "plantation" built for the government by the B. F. Goodrich company at Port Neches, Texas. Emulating Chicago packers who reputedly use all of the pig but the squeal, the stripping columns recover the styrene not entirely "used up" in the process of synthesis, so that it can be used again. Butadiene is also recovered. Center—The rubber latex enters these wooden coagulation vats after passing through the polymerizers. While in the vats curds of solid rubber form in the liquid. They then pass through further processing and drying operations and eventually emerge as dry crumbs of rubber. Bottom—A battery of polymerization tanks. Each of the tanks has a capacity of 3,750 gallons. Polymerization is the key step in making synthetic rubber. During this process butadiene, styrene and other raw materials are synthesized into the rubber latex that is compressed into blocks of crude synthetic rubber at later stages.***

# SOUTHERN CONSTRUCTION AWARDS SHOW GAIN IN AUGUST

SOUTHERN construction advanced in August to $121,790,000, or 4 per cent above July mainly because of a revival of industrial construction, besides increased activity in private residential work in congested areas and additional airport construction at strategic points.

Industrial contracts in August totaled $28,283,000, or 88 per cent over the figure for July. August residential awards of private origin amounted to $10,595,000, or nearly 118 per cent above the July total.

The increase in airport construction was nearly 16 per cent, amounting to $26,032,000 in August, compared with $22,468,000 in the preceding month. This rise bolstered engineering construction in August to $27,954,000, which was slightly above July despite a marked decrease in water and sewer work.

While the rise in residential work was occasioned by critical housing conditions in war production communities, and the increase in airport construction was required by military defense and training preparations, the increase in industrial contract awards is an anomaly in the war production program, the announced plan of which was to be greater production by existing facilities rather than construction of new plants and enlargements.

Indications are there are still production problems. This is evidenced by the fact that a substantial part of the August industrial total was represented by an $18,000,000 aluminum extrusion plant being launched in the middle South. Other smaller, but important projects included a $2,000,000 power station in the Southwest; a $1,000,000 shipyard addition in the Southeast; a $1,850,000 distillery products plant in Missouri; a $400,000 aircraft plant addition in Oklahoma and a $300,000 plant expansion in Virginia.

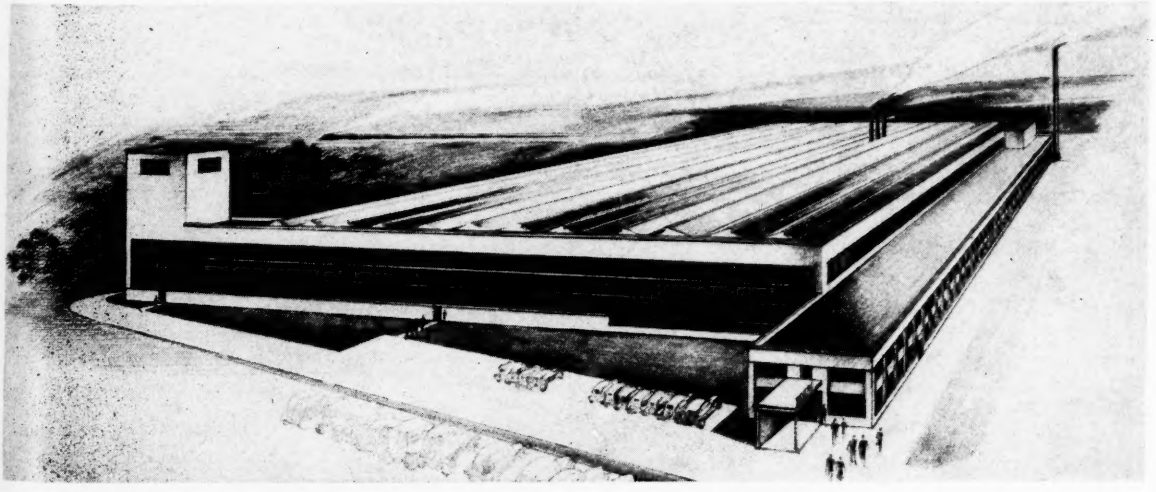
The expansions occurred in numerous other industries. Many of these were of a minor nature, but they were in widely varying industries and were indicative of the activity below the Mason and Dixon line and the important part the South is playing in the war effort. How varied were the fields in which these extensions are being made is shown by the following list of industries in which they occurred:

**Aircraft, aluminum fabricating, bags, bakery, canning, cold storage, boatbuilding, bottling, citrus, dairy, distillery, gas, instrument, oil, packing, plywood, radio, power, railroad, shipbuilding, ship repair, sanitary utensil, textile and tool manufacture.**

## South's Construction by Types

| | August, 1943 Contracts Awarded | August, 1943 Contracts to be Awarded | Contracts Awarded First Eight Months 1943 | Contracts Awarded First Eight Months 1942 |
|---|---|---|---|---|
| **PRIVATE BUILDING** | | | | |
| Assembly (Churches, Theatres, Auditoriums, Fraternal) | $237,000 | $445,000 | $1,079,000 | $3,926,000 |
| Commercial (Stores, Restaurants, Filling Stations, Garages) | 978,000 | 1,225,000 | 1,582,000 | 4,300,000 |
| Residential (Apartments, Hotels, Dwellings) | 10,595,000 | 4,375,000 | 44,707,000 | 92,582,000 |
| Office | 25,000 | 15,000 | 45,000 | 1,047,000 |
| | $11,835,000 | $6,060,000 | $47,413,000 | $101,855,000 |
| **INDUSTRIAL** | $28,283,000 | $7,950,000 | $230,263,000 | $936,455,000 |
| **PUBLIC BUILDING** | | | | |
| City, County, State, Federal | $28,889,000 | $36,264,000 | $328,326,000 | $1,301,511,000 |
| Housing | 8,310,000 | 19,138,000 | 152,580,000 | 177,040,000 |
| Schools | 1,257,000 | 3,958,000 | 11,102,000 | 27,002,000 |
| | $38,456,000 | $59,360,000 | $492,008,000 | $1,505,553,000 |
| **ENGINEERING** | | | | |
| Dams, Drainage, Earthwork, Airports | $26,032,000 | $16,607,000 | $209,430,000 | $278,173,000 |
| Federal, County, Municipal Electric | ..... | 50,000 | 4,322,000 | 12,987,000 |
| Sewers and Waterworks | 1,922,000 | 8,183,000 | 27,700,000 | 50,103,000 |
| | $27,954,000 | $24,840,000 | $241,452,000 | $341,263,000 |
| **ROADS, STREETS AND BRIDGES** | $15,262,000 | $14,087,000 | $97,049,000 | $114,896,000 |
| **TOTAL** | $121,790,000 | $112,297,000 | $1,108,185,000 | $3,000,002,000 |

*Pictured below is an architect's drawing of the new $6,000,000 mill which James Stewart & Co., New York, N. Y., is building for the Defense Plant Corporation in Maryland. This plant, to extrude aluminum and magnesium for components of aircraft, will be operated for the Defense Plant Corporation by the Revere Copper & Brass Company on the 28-acre site made famous by the B. & O. Railroad in connection with the Iron Horse. The main building of 350' by 650' will have two extensions, one 50' by 100' and the other 40' by 100'. Principal construction will consist of concrete foundation, steel frame, brick masonry, wood sash and concrete plank roof. Present schedule calls for the plant to be in operation early next year.*



# Important New Industrial Plants and Expansions in the South During August

## ALABAMA

**DECATUR** — manufacturing building — A. K. Adams Co., 542 Plum st., N. W., Atlanta, Ga., has contract for 1-story manufacturing building for Goodyear Tire & Rubber Co., Akron, Ohio; 280x520 ft.; mill type.

## FLORIDA

**MIAMI** — yacht basin — George L. Dixon has permit to excavate and construct yacht and boat storage basin on north side of Tamiami canal about 1800 ft. west of Red Rd., adjoining right of way of N. W. Seventh St.; expend $10,000.

**MIAMI** — warehouse — Shaw Brothers Dock Development, 56 S. W. First Street, let contract to Heath & Mann, 3601 N. W. North River Drive, for construction of storage warehouse and docks; R. DeC. Weakley, Congress Building, Miami, Architect; Nu-Way Plumbing Co., 1825 21st Terrace, Miami, has plumbing contract; Miami Roofing & Sheetmetal Co., 350 N. W. 7th Street, Miami, for roofing.

**PINELLAS COUNTY** — plant addition — U. S. District Engineer, P. O. Box 4970, Jacksonville, let contract to Edward S. Moore & Sons, St. Petersburg, for the construction of addition to a plant; $50,000; NEG-JAX-43-1166.

**VOLUSIA COUNTY** — plant — Murphy Construction Co., West Palm Beach, has contract for plant addition; $50 000; U. S. Engineer Office, Jacksonville, owners.

## GEORGIA

**DECATUR** — additions — Capital Construction Co., 157 Cain St., N. W. Atlanta, has contract for alterations and additions to building for Nationl Traffic Guard Co., cost $60,000.

**SAVANNAH** — plant — Bradley Plywood Co., Waldo Bradley, Pres., started construction work on plywood plant on tract near Augusta Rd.; production expected to begin in October; will produce 1,000,000 surface feet of hardwood plywood monthly; plant will be 136 ft. wide and 630 ft. long; built of cement blocks; mill construction; install modern machinery; cost complete, $100,000.

**SAVANNAH** — addition — Daniel Construction Co., Greenville, S. C., has contract for addition to shipyard at Savannah, for Maritime Commission; cost $1,000,000.

## KENTUCKY

**FRANKFORT** — protein plant — Carl J. Kiefer, Cincinnati, vice president in charge of production of Schenley Distillers Corp. let contract to Frank Messer & Sons, Inc., 2515 Burnet St., Cincinnati, Ohio, for construction of protein recovery plant at the George T. Stagg Co., Inc.; War Production Board approved priorities and approved expenditures not to exceed $550,000; work to begin at once; project includes 2-story dry house, alterations and additions to boiler plant and a new yeast room at cost of $400,000; installation of power generating and other equipment, $153,000; total of 85 tons of dried grains will be recovered daily.

**KENTUCKY** — plant facilities — Defense plant Corp., Washington, D. C., let contract to Wathen Brothers Distillers, Louisville, at $65,000 for plant facilities.

## LOUISIANA

**NEW ORLEANS** — sewers—Boh Brothers Construction Co., 2400 Cypress st., has contract on cost-plus-fixed-fee basis for construction of complete sewerage system with pumping station and buildings for Pendleton Shipyards Co., Inc.

**NEW ORLEANS** — office, etc. — Otis W. Sharp & Son, 1838 Robert St. has contract for alterations and extensions to office space, new heater room and installing heating system in Storeroom No. 2; Maritime Electric Co. has contract for complete installation of additional welding circuit on east side of wet dock; and Otis W. Sharp & Son, 1838 Robert St., has contract for construction of men's toilet and locker rooms at Mess Hall No. 1 and No. 2, at shipyard plant of Delta Shipbuilding Co., Inc.; O. O. Carpenter, plant facilities engineer.

**NEW ORLEANS** — box factory — J. A. Haase, Jr., Inc., 822 Perdido St., has contract for 2-story; 66x120 ft. plant for Crescent Paper Box Co., 1523 Constance St.; cost $20,000; Weil & Moses, Engrs., 427 S. Peters St.

**NEW ORLEANS** — boiler house piping, etc. — Turner-Raymond Company, contractors Michland, announced award of contract to Lorne Plumbing & Heating Co. of Detroit, Mich., for the construction of boiler house piping and contract to Wallace Plumbing Co., 2224 Summer St., Dallas, Tex., for installation of heating system in plant at Michaud for plant of Higgins Aircraft Corp.

## MARYLAND

**BALTIMORE** — building — Lacchi Construction Co., 3375 St. Paul Place, has contract for 2-story, frame, employee training building for Maryland Drydock Co.; J. E. Greiner, Engr., 1201 St. Paul St.

**BALTIMORE** — alterations — Following have sub-contracts for alterations to engine houses, boiler room, at Riverside: B. & O. R. R., L. P. Kimball, Engineer's Office, B. & O. Bldg., owner; Steiner Construction Co., 2122 Maryland Ave., general contractor: Allen Tyler & Son Co., 2301 N. Charles St., brick work: Charles A. Gareis, 1417 Carswell St., steel: Fairmount Mill & Lumber Co., 1435 E. Fairmount Ave., millwork; private plans.

**BALTIMORE** — plant — Cogswell Construction Co., 513 Park Ave., has contract for fire damage repairs to building, 109-11-13 South St. for Moore & Co.

**BALTIMORE** — loading platform — Morrow Brothers, Inc., 14 E. Eager St., has contract for loading platform and elevator pits, Maryland Ave. and Oliver St. for May Oil Burner Co.

**BALTIMORE** — laboratory — Morrow Brothers, Inc., 14 E. Eager st., has contract for alterations and addition to mechanical laboratory, Bush & Hamburg Sts. for Koppers Co.; brick; $20,000.

**BALTIMORE**—alterations—Linen Thread Co., let contract to Morrow Brothers, Inc., 14 E. Eager St. for alterations to building, Johnson and Barney Sts.

**BALTIMORE** — tank — Chicago Bridge & Iron Co., Chicago, Ill., has contract for steel tank, 630,000 gal. capacity at 1610 S. Newkirk St for Standard Oil Co. of New Jersey; cost $20,000.

**BALTIMORE** — addition — Leimbach & Williams, 30 W. Biddle St. has contract for boiler room addition, 3400 E. Biddle st. for Hinde & Dauch Paper Co.

**BALTIMORE** — shop building — George S. Awalt & Co., Morris Building, has contract for shop building, 1530 Russell St. for Gross Mechanical Laboratories; 1-story brick; Lawrence E. Menefee, archt., Morris Bldg.

**DUNDALK** — building — Cummins Construction Corp., 803 Cathedral St., has contract for dryer building, for Baltimore Pure Rye Distilling Co., 114 E. Redwood St., Baltimore; private plans; $22,000.

**MIDDLE RIVER** — personnel facilities — Morrow Brothers, Inc., 14 E. Eager St., Baltimore, has contract for personnel facilities for Glenn L. Martin Co.'s plant; N. O. Y. 7108.

**OELLA** — addition — Leimbach & Williams, 30 W. Biddle St., Baltimore, has contract for addition and alteration to building for W. J. Dickey & Sons.

**RELAY** — manufacturing building — U. S. Concrete Pipe Co., lessee, erect $23,000 concrete pipe manufacturing building; owner builds; site, Washington Blvd. and East St.

Expansion — Defense Plant Corporation authorized an increase in its contract with Maryland Sanitary Manufacturing Co., 4500 E. Lombard St., Baltimore, to provide additional facilities, at cost of $150,000.

## MISSOURI

**ST. LOUIS** — office building — Kupferle Hicks Heating Co., 3974 Delmar Blvd., has contract for heating for office building, Waldemar, Manchester and Kraft Aves. for Scullin Steel Co., 6700 Manchester Ave.; H. B. Deal & Co., Gen. Contr., 1218 Olive St.; Rethwilm & Gartland Plumbing Co., 1021 Big Bend Blvd., Richmond Heights, has contract for plumbing; S. C. Sachs Co., 2022 N. Ninth St., contract for electric work; Paolinelli & Schmidt, 1623 Arcade Bldg., Archt.

Plant—Defense Plant Corporation, Washington, D. C., closed contract with National Distillers Products Corp., New York, for additional plant facilities in Missouri; cost $1,850,000.

Plant—Defense Plant Corp., Washington, D. C., closed contract with American Thermometer Co., St. Louis, to provide equipment for plant in Missouri; cost $30,000.

## OKLAHOMA

**OKLAHOMA CITY** — remodeling, etc.—Leo Sanders, Trades National Bank Bldg., has contract to remodel, renovate warehouses, building and paving of roads and streets, etc., at Douglas Aircraft plant; cost, $400,000.

## TENNESSEE

**CLARKSVILLE**—plant—C. G. Kershaw & Co., Birmingham, Ala., have contract for construction of addition to water purification plant consisting of 250,000 gallon concrete settling basin; estimated cost, $25,000.

**CLINTON**—plant—Ford, Bacon & Davis, Inc., New York, has construction contract at Clinton Engineer Works; local office, Empire Building, Knoxville.

**MEMPHIS**—aluminum plant — Reynolds Metals Co., Louisville, Ky., and Richmond, Va., let contract to Struck Construction Co., 1110 W. Liberty Street, Louisville, for erection of an $18 000,000 extrusion plant on 270 acre tract near Raines Station, on Illinois Central R. R., 6 miles south of Memphis; plant will produce bomber parts by the extrusion process; plant will be owned by the Government; raw material will be Arkansas bauxite which will be processed at company's reduction plant in Alabama.

**NASHVILLE**—addition to gas plant—V. L. Nicholson & Co., have contract at $40,000 for addition to gas plant, for Nashville Gas & Heating Co., c/o Manager, 226 6th Ave., North.

**NASHVILLE** — remodeling — Nashville Beverage Co., has building permit for remodeling of a building at 1001-1003 Russell St., to be used as a bottling plant.

## TEXAS

**BEAUMONT**—lumber mill—Burrus Lumber Co., 1701 Crockett St., purchased mill in Lake Arthur, moved it to Beaumont, replacing burned structure; capacity 1,250,000 feet per month.

**DALLAS**—building—Cedric Burgher Construction Co., 3027 Main St., has contract for parts building, oil storage, scale house and pit, 2925 Oak Lawn for Defense Plant Corp., Arthur Thomas, Construction Bldg., Dallas, Archt.

**DUMAS**—plant—U. S. Engineer Office, Denison, let following contracts for Cactus Ordnance Works: Eckert-Fair Construction Co., Liberty Bank Bldg., Dallas, at $500,000; Sherman Machine & Iron Works, 18 E. Main St., Oklahoma City, Okla., $50,000; M. S. Moore, Ada, Okla., $50,000.

**FORT WORTH** — remodeling—Cain & Cain, Majestic Bldg., has contract for remodeling 3-story factory building, 2617 W. 7th St., for Leonard Brothers.

**HOUSTON**—addition—Oil Tool Manufacturing Co., 1318 Nance St., construct struc. steel and masonry building; owner builds.

**HOUSTON**—repairs—George P. O'Rourke Construction Co., P. O. Box 7557, has contract for storm damage repairs to building for Hydril Co. of Texas, Inc.

**HOUSTON**—addition—Peterson Bros., has contract for repairs to Dixon Gun Plant; U. S. Engineer Office, Galveston, owner; cost $30,000.

**HOUSTON**—plant—P. M. Marshall, 2216 Congress Ave., has contract for plant building, 600 Milby St., for McEvoy Co.; 1-story; frame and stucco; conc. slab found.; built-up roof.

**WESLACO**—warehouse—Rio Grande Valley Citrus Exchange, R. B. McLeash, Mgr., let contract to Noser Construction Co., State Bank Bldg., McAllen, for $60,000 warehouse, Texas St., between Fifth and Sixth Sts.; brick and rein. conc.; 1-story; 120x280 ft.

Pumping Equipment — Stanolind Pipe Line Co., Stanolind Bldg., Tulsa, Okla., installing an additional pumping unit of each of 3 stations, Lakenon, Graford and Bowie and expect to install a supercharger at Cresson; stations are on main line between Mexia, Texas, and Healdton, Okla.; work by company's forces.

## VIRGINIA

**NORFOLK**—addition—Dewey Construction Co., Norfolk, has contract for addition to plant of Southern Diaries Co., Inc., 22nd St. and Llewellyn Ave.; 1-story; glass and brick; 38x58 ft.; cost $18,000.

**RICHMOND**—addition—Claiborne & Taylor, Inc., 117 S. Second St., has contract for addition to plant of Kingan & Co.; Carneal, Johnston & Wright, Archts., Atlantic Life Bldg.; cost $300,000.

## WEST VIRGINIA

**MORGANTOWN**—pump—Pursglove Mining Co., let contract to A. D. Cook Pump Co., for 2 deep well, turbine type, acid-resisting, 330-foot head pumps for repairs to Mine No. 15.

# Contracts Proposed

## ARKANSAS

**MOUNTAIN HOME**—stave mill—Hinkle Brothers Stave Mill Co., will rebuild burned portion of plant.

**YELLVILLE**—sorghum plant—I. A. Lower, formerly of Wichita, Kansas, establishing sorghum manufacturing plant and sassafras oil plant.

## FLORIDA

**JACKSONVILLE**—yacht basin—Huckins Yacht Corp. applied to War Department for permit to construct a yacht basin and boat lift in the Ortega River; 250x315 ft., with minimum depth of 4 feet.

**MIAMI**—boatways — Nuta Yacht Basin, 1884 N. W. North River Drive, has plans by M. B. Garris, Congress Bldg., for conc. boatways, marine ways, etc.; cost $15,000; owner builds.

**ST. PETERSBURG**—freezing plant—E. L. Gordon contemplates erection of freezing plant; 200 ton fish.

## GEORGIA

**RICHLAND**—plant — Furlow Gatewood, Americus, purchased The Richmond Gin Co., a modern electric ginnery; plant to be reconditioned immediately.

## LOUISIANA

**GRETNA**—yeast house—Leo. S. Weil and Walter B. Moses, Engrs., 427 S. Peters St., New Orleans, La., received bids August 25 for building a complete new yeast house at Gulf Distilling Corp's plant; work to consist of tanks and piping; following are prospective estimators: A. N. Goldberg, Maison Blanche Bldg.; American Heating & Plumbing Co., 829 Baronne St.; Sciambra & Masino, Inc., 636 N. Broad St.; James F. O'Neil, 2800 Howard Ave., all New Orleans.

**MORGAN CITY**—wharf—Chicago Bridge & Iron Co., applied for War Department permit to construct and maintain a timber and pile wharf 420 ft. long and 20 ft. wide with bulkhead, located west of Harvey Lock, near Morgan City in St. Mary Parish.

***The exceptionally prominent place that North Carolina has taken in industrial and agricultural war work for the good of the Nation, and in hospitality to the hundreds of thousands of troops within its borders is worthy of special mention.***

***The MANUFACTURERS RECORD takes pleasure in announcing that its October issue will feature, along with its regular editorials and articles, special information that will show to its readers by illustrations as well as articles, the outstanding contribution this State is making to America's war effort.***

**NEW ORLEANS**—dry dock plant—Pendleton Shipyards Co., Inc., Industrial Canal and Gentilly Rd., completing plans and specifications, soon call for bids for construction of bulkheads and facilities for the installation of a 1000-ton drydock at its yard for the Navy Department; contract for test borings for piles awarded to Raymond Concrete Pile Co.

**OPELOUSAS**—compress — Charles Bourque, Lewisburg, acquired Opelousas Compress Co.; plans alterations to plant.

Pipe Line—Tide Water Associated Oil Co., Houston, Tex., applied for installation and maintenance of 2 crossings of 7-in pipe line under and across Red Pass upstream from Spanish Pass, near Venice.

Shell Crushing Plant—State Board of Liquidation, New Orleans, has appropriated $20,000 for construction and operation of sea shell crushing plant for production of agricultural limestone at Bayou Lecombe in St. Tammany Parish; U. S. Soil Conservation Service making available approximately $23,000 in machinery and equipment; A. O. Ott, Chairman of Board of Supervisors of Bogue Chitto, Pearl River Soil Conservation.

## MARYLAND

**BALTIMORE**—addition — Davison Chemical Corp., Curtis Bay, received bids August 13 for addition to office building; Consolidated Engineering Co., 20 E. Franklin St., and Leimbach & Williams, 30 W. Biddle St., both Baltimore, estimating.

**BALTIMORE**—buildings — Bendix Radio, E. Joppa Rd., leased 7-story building in 300 block W. Fayette St. for warehouse; Friez Instrument Division of Bendix leased a 5-story building at Lafayette Ave. and Dickson St. for increased manufacturing operations.

**BALTIMORE** — reservoir, etc.—Westinghouse Electric & Manufacturing Co., George H. Parkman, P. O. Box 1017, East Pittsburgh, Pa., received bids August 18, at Pittsburgh, for reservoir and pump house, oil drum storehouse and misc. work at 2519 Wilkins Ave., Baltimore; Morrow Brothers, Inc., 14 E. Eager St., Baltimore, estimating.

**HAGERSTOWN**—air line — Union Airways, Inc., J. Henry Reisner, Pres., applied to Civil Aeronautics Board for approval of six airlines extending from Rochester, New York, to Winston-Salem and Raleigh, N. C., and from Pittsburgh to Annapolis, Md.

**HAGERSTOWN**—plants — Fairchild Aircraft Division acquired former Southern Shoe Co. structure and Eader Textile Corp., formerly Roulette Knitting Mill; will connect one of the buildings with Plant 26; operate two plants as single unit; other building will contain control offices, central receiving and inspection and truck transportation headquarters.

**LaPLATA**—freezing plant—Leonard Snider and associates interested in establishment of quick freezing plant.

**RELAY**—alterations — Calvert Distilling Co., receiving bids for alterations to building; Cogswell Construction Co., 513 Park Ave., and Consolidated Engineering Co., 20 E. Franklin St., both Baltimore, estimating.

**RELAY**—alterations—J. E. Seagrams & Sons, Inc., Louisville, Ky., received bids at Louisville, August 19 for alterations to service building; following are prospective estimators: Consolidated Engineering Co., 20 E. Franklin St.; Cogswell Construction Co., 513 Park Ave.; Frantz Construction Co., 10 W. Chase St., all Baltimore.

## MISSISSIPPI

**GULFPORT** — plant — Phoenix Naval Stores Co., Wade H. Hatten, Pres., will rebuild burned plant.

## MISSOURI

**BUTLER**—coal mines—Emory Johndrow, of Appleton City, V. W. Greene of Hubbell Coal Co., Kansas City, have joined in the organization of J. & W. Coal Co.; has under lease 1000 acres in Appleton City area east of Butler, and has begun stripping operations; completing tipple.

## NORTH CAROLINA

**DURHAM**—plant—Durham Container Co., J. F. Burnham, general manager, plans $250,000 plant for post-war construction; cost includes land, building and equipment; will contain 75,000 sq. ft. of floor space, including cold storage area; install cardboard corrugating machinery; equipment purchased.

## TENNESSEE

**MEMPHIS**—power plant—The Memphis Light, Gas & Water Division will call for bids for construction of a $75,000 electric substation at Greer and Southern; station will supply current to Memphis Street Railway Co. electric coaches serving war plants in vicinity of Kennedy General Hospital; priorities have been obtained and construction will start soon.

## TEXAS

**HOUSTON**—enlargement—Harris County Farmers Victory Cooperative Society, Ward H. Farrington, Pres., plans to enlarge canning plant at 1918 Gray St.

**McALLEN**—pipe line—Rado Refining Co., Charles J. Holland, Pres., completed plans for five mile, 6-in. pipe line from company's plant in West McAllen to Military Highway

(*Continued on page* 80)

# EVERY WALK of LIFE

*By*

RAYMOND J. FUNKHOUSER,

*Raymond J. Funkhouser*

THE American people are lots and lots of families in EVERY walk of life. I know how people feel who often wonder how they will pay their bills; who sometimes do not know where their next meal is coming from; who work and slave and yet seem to get nowhere. I know about these people because I was one of them.

When I was 12 years old I was one of them, my family was of them. That's why I couldn't go to high school, let alone college.

I know how it feels to work in a mine; to get so dirty that you sometimes feel that you are not a human being; inhaling coal dust so that you keep spitting it up for hours and when you blow your nose your handkerchief is black. I know how tired you get and how uninviting the future sometimes looks when every day brings the same hard toil and nothing to look forward to but your wife and kids. And the only reason for living and working is the pleasure derived from being able to give THEM certain small comforts.

I know about those kinds of people first hand because of the years I spent doing that kind of work.

I know about the people who hold thousands of small, little jobs —jobs that must be done—jobs that have no glory, very little pay, and are full of small disagreeable, thankless little chores. I can speak with authority. Because some thirty years ago there was a guy named Raymond J. Funkhouser who was the night clerk, the lobby scrubber and the spittoon emptier in a tenth rate Pittsburgh hotel at a salary of exactly $15.00 a month, including room and NOT board.

I could tell about being a railroad worker, and a farm hand; about working in stone quarries; about being a store clerk; and a salesman.

I can also tell about how the well-to-do people, the middle class, and the richer people feel because as I sat there in that Pittsburgh hotel, waiting for a drunk to check in or a drummer to check out, I thought about the things I wanted in life. I thought about America, about this country, this way of life, this way of Government. I thought about the chances it offered to me, a $15.00 a month clerk and to thousands like me, working in mines, on farms, in offices. America was a free country. If I worked hard; if I were honest; if I were industrious, I could be a success. I believed those things then. I believed them with all my heart and soul and I was right to believe them because they were true.

They were true then and they must STAY true. Now that I am inside the door, I refuse to sit back and see that door slammed shut in the faces of other honest, industrious, hard-working young Americans who follow. If their initiative and industry is to be stifled, then first there must be stifled the voices of thousands and thousands of successful Americans who would rather die than see opportunity leave this land.

The birthright of opportunity cannot be bought from us with a mess of pottage called Government Security. Millions of ambitious young Americans cannot be relegated to positions of accepting a Government dole of a few dollars a week. The opportunity to achieve success which was permitted to us, their fathers, cannot be denied them!

There are men who have received from life all that it can give, yet who if necessary will spend every penny they have made to see that this same RIGHT and OPPORTUNITY is accorded to their fellowman. There are men in America, thousands and thousands of them, who know that perhaps they shall never gain wealth or position, who realize that every day will be a struggle, yet these men WILL fight tooth and nail to preserve the right and the opportunity to achieve success for their sons and for their fellowman.

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## "Re-Appraising Arkansas"

"Re-Appraising Arkansas" is the title of a brochure, illustrated by some 100 photographs, reviewing the industrial and agricultural progress and potentialities of Arkansas and recently published by Halsey, Stuart & Co.

"The greatest recent gain in Arkansas," the brochure states, "has been in its mineral production; likewise one of its greatest potentialities for future gains lies in this field and in the processing of its mineral products. Thirty-five minerals are found in Arkansas, of which 25 are being produced commercially. Those of greatest present economic importance are bauxite (from which aluminum is made), petroleum, natural gas and coal.

Under the heading of Agriculture, the brochure points out that the Arkansas cotton yield in 1942 was 1,485,000 bales (third among the Southern States). The per acre yield of 362 pounds was the highest the State has attained. Production of soy beans and peanuts more than doubled.

Arkansas is also reported third among the Southern States in the production of timber, and the State in 1941 (latest

(*Continued on page* 76)

# Ethyl Cellulose Production Doubled to Meet War Needs

PRODUCTION of ethyl cellulose, one of the newest and most important in the family of cellulose derivatives, has been doubled at the Hopewell, Va., plant where it is made in the world's largest chemical cotton plant. Because of its special properties, it has found wide application in war uses, with a postwar future that seems equally bright.

A rapidly developing and very important use for ethyl cellulose, due to high impact resistance, is in hot-melt plastics for making dies and jigs for forming tools for shaping aluminum. This process is very economical because the plastic is light weight and can be remelted and recast in different molds. This saves time in changeover on design and also saves machining operations.

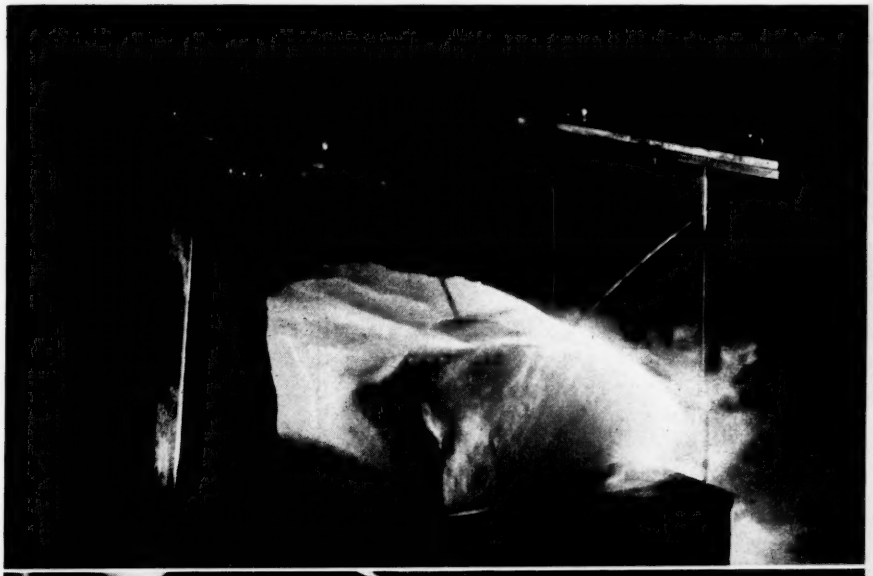
Due to resistance to cold-temperature cracking, ethyl cellulose has been used in both injection molded and deep-drawn ice cube trays. Success in making deeper draws with ethyl cellulose than can be made with other thermoplastic materials, has been reported. Airplane control knobs and wheels, extruded shapes are other uses.

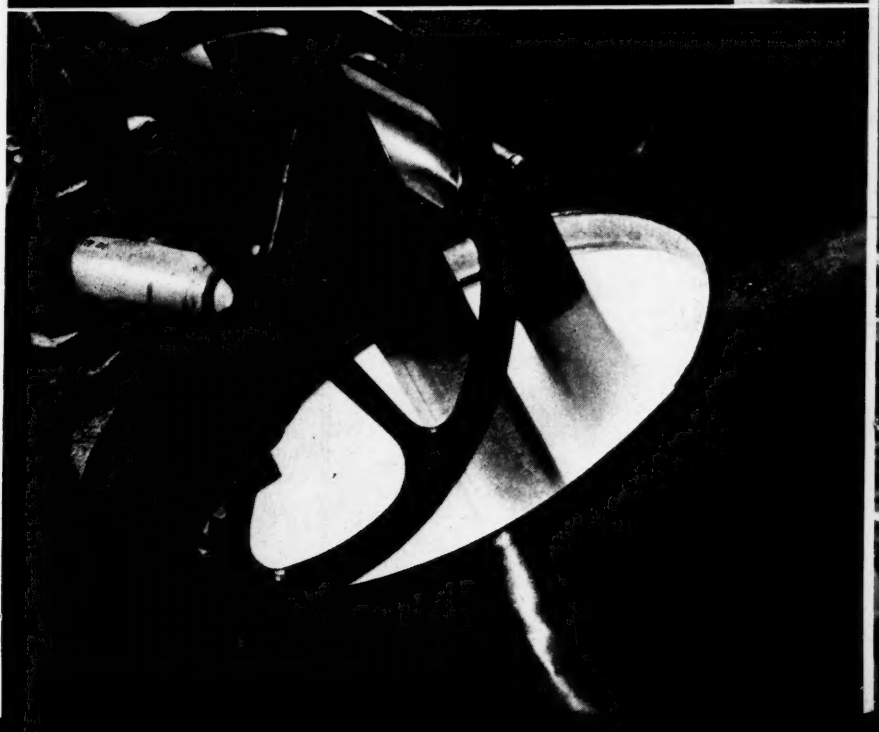
It is also used for coating insulating wires of airplane engines because, in addition to excellent electrical properties, it will not snap under frigid conditions of sub-zero stratosphere cold and quick temperature change. Extruded ethyl cellulose plastic is also being used in cable cores.

In addition, brightly colored squares of cloth used to identify Army ground equipment and prevent American planes from attacking their own troops are coated with Hercules Ethyl Cellulose.

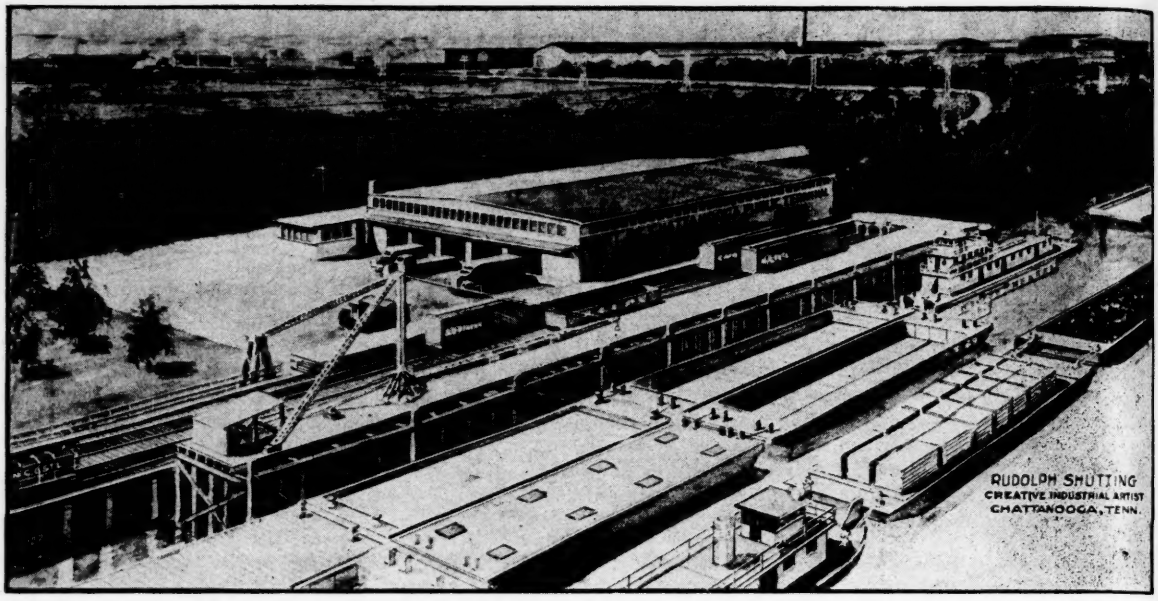
These patches of cloth, some of them only a few feet square, can be seen two miles up by fighter planes going at top speed. The Army uses a special ethyl cellulose coating because tests show it will remain fully flexible in winter cold

(*Continued on page* 76)





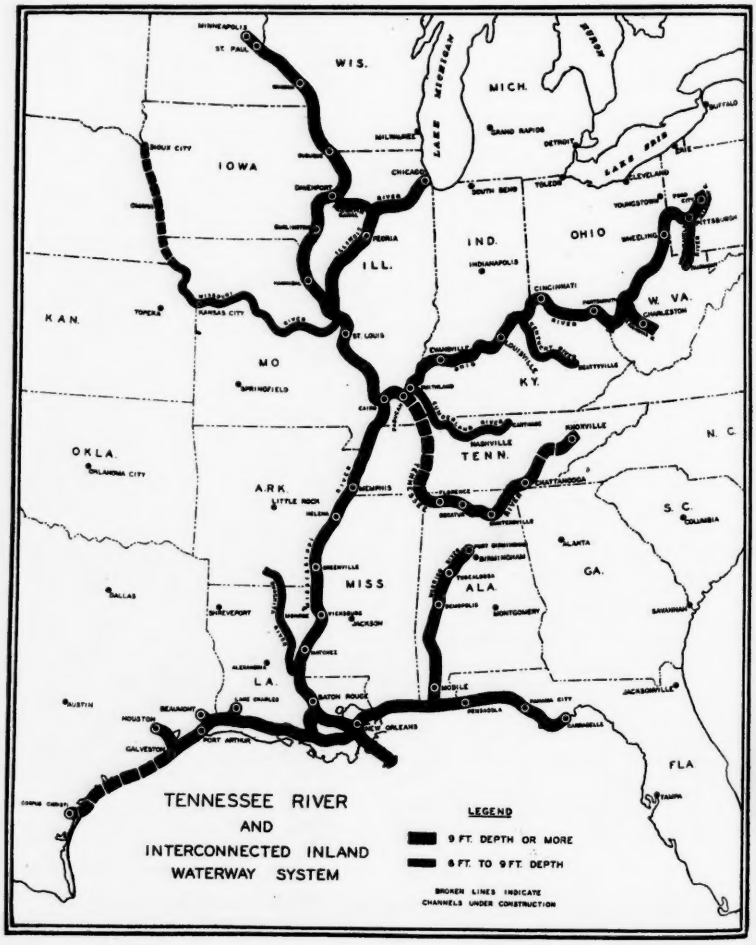
***Top—The ethyl cellulose flexing test. A film of ethyl cellulose is flexed resting on a block of dry ice, subjecting the film to extremely low temperatures in order to show the ability of the plastic film to resist cracking. Bottom—After thorough washing at the Hopewell, Virginia plant, the ethyl cellulose slurry is spun dry in a big automatic discharging monel metal centrifuge. The dried product is then dropped through the bottom into a receiving hopper of monel, from whence it is loaded into drying ovens.***

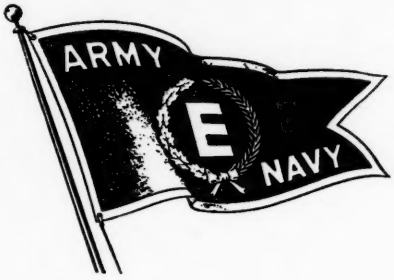



# River Terminal Dedicated in Tennessee

The first of a series of four river terminals that will be placed in service in the Tennessee Valley this year was dedicated in Chattanooga on August 27th. This marked the beginning of a new era of water borne freight on the Tennessee river which follows the completion of the nine-foot channel from Paducah 652 miles across the Valley to Knoxville. It is estimated that this commerce will save shippers $3,500,000 a year before 1945.

Five thousand miles of inland waterways providing deep water channels for barge traffic has been extended by 652 miles with the opening of the Tennessee river to year-around commerce. Movements of bulk freight and war material have already reached an important volume on this waterway. A constant 7½-foot channel is now available from Paducah to Chattanooga. Before the end of the year this channel will be extended to Knoxville and will provide a 9-foot navigation course the full length of the stream.



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The honor of being the first Southern owned and operated work clothes manufacturer to win the Army-Navy "E" Award is made possible by our patriotic customers and suppliers and the unstinted hard work and loyalty of our employees.

We humbly and sincerely pledge our total efforts until the enemy is no more.

NUNNALLY & McCREA CO.

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***Work Clothes For War Workers***

# SAVING TIME NOW THE VITAL THING

## Less Repair Work Helps Save It

The design of Whitcomb locomotives is so time-tried and practical, their construction so careful and thorough, and the materials used so high-grade and suitable, that repairs are reduced to the lowest possible level. This means not only economy, but more time to devote to actual production so vitally necessary under present conditions. So, if you are responsible for the operation of a mill, factory or any other kind of plant requiring haulage and switching, you owe it to yourself and firm to get thoroughly acquainted with Whitcomb locomotives. There is a design for every type of service.

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**DIESEL, GASOLINE, MECHANICAL, OR ELECTRIC DRIVE—*The Products of a Pioneer.***

**THE WHITCOMB LOCOMOTIVE CO.**

ROCHELLE, ILL.

*Subsidiary of* THE BALDWIN LOCOMOTIVE WORKS

## 1,200 Mile Natural Gas Pipeline to be Built

A new 1200-mile natural gas pipeline must be built from the southwest to the Appalachian manufacturing area for the winter of 1944-45 the War Production Board has decided and has advised the Federal Power Commission WPB would issue necessary authorizations for materials as soon as the Commission decides which of two applicants will build the line.

The two applications pending before the Commission are from the Tennessee Gas and Transmission Company and the Hope Natural Gas Company. The Tennessee line would originate near Corpus Christi, Texas, and run through Louisiana, Alabama, Tennessee and Kentucky to a terminal point at Cornwall Station, West Virginia. The Hope project would originate in the Hugoton field of Kansas and Oklahoma and extend through Missouri, Illinois and Kentucky to the same terminal.

Neither line has any substantial advantage over the other, in requirements for critical materials and equipment, the Commission was informed. Both are slightly more than 1200 miles long, will require approximately 215,000 tons of steel. The completed line will be either 22- or 24-inch.

The lines are practically identical, also, in deliverability of gas. Present estimates call for delivery of slightly more than 200 million cubic feet a day from either line—and either can be stepped up in case of need later on to about 300 million daily.

## $116,800,000,000 Spent for War Purposes Through July

Expenditures for war purposes by the United States Government amounted to $6,746,000,000 during the month of July, a decrease of $942,000,000 from expenditures in June, or 12 per cent. This is the first time since February of this year that monthly war expenditures have decreased from the previous month.

The average daily rate of war expenditures in July amounted to $249,900,000 compared to a daily rate of $295,700,000 in June, a decrease of 15 per cent. The daily rate is based on the 27 days in July and the 26 days in June upon which checks were cleared by the Treasury. This is the first decrease in the average daily rate since December of 1942 and the lowest rate since January of this year.

From July 1, 1940, through July 31, 1943, the United States Government expended $116,800,000,000 for war purposes.

## War Facilities Program Four-Fifths Complete

The nation's gigantic government-financed war facilities program was more than four-fifths completed at the year's midpoint, according to WPB's chairman, Donald M. Nelson.

At the end of June, the completion of $12,038,000,000 out of a current $14,582,000,000 Government-financed war facilities program had been accomplished. That compares with 61 per cent at the beginning of the year and only 34 per cent a year ago.

The mid-year mark saw the greatest accomplishment in the construction of plants to produce finished munitions such as guns, combat vehicles, aircraft, ships and ammunition. Facilities for production of ammunition and explosives were 95 per cent completed.

This remarkable record, Mr. Nelson declared, means that the arsenal which America is building to defeat the Axis is rapidly nearing completion, and as facilities construction moves along a planned decline, more and more of the nation's resources can be thrown into the direct production of munitions.

The construction and equipment of plants to produce raw materials, such as synthetic rubber and steel, was fast catching up after earlier tendencies to lag. The extent of the advance which has been gained in this category this year is illustrated by the synthetic rubber program. Only 3 per cent finished a year ago, the synthetic rubber facilities program was 15 per cent in place at the beginning of 1943, and had risen to 61 per cent by the end of June.

It is only since the beginning of this year that raw materials facilities passed the half-way mark, Mr. Nelson pointed out. For example, while only 15 per cent of the federally financed synthetic rubber program was in place on January 1, construction and equipment deliveries moved rapidly ahead to the favorable position they occupied at the end of June after receiving preferential treatment for components.

The largest percentage gain of the first half was registered for plants to produce 100-octane gasoline. At the beginning of the year, less than 1 per cent of the Government-financed program was in place, but by July 1 the program was about 39 per cent complete. High-octane gasoline plants have been granted high preference ratings, and steady increases in the program may be expected over the remaining months of the year. Even greater progress has been made in the privately financed high-octane program where, by July 1, around 63 per cent of the expansion had been completed.

In the iron and steel program, which is now more than 75 per cent in place, seven of the plants that are furthest advanced are being rushed to completion this year, and these alone will make up about one-third of the entire program.

In the field of chemistry, only 31 per cent complete a year ago, the chemical program had risen to 66 per cent at the beginning of 1943 and is more than 90 per cent completed today.

An analysis of the Government's war facilities program this year clearly indicates that the end of the munitions facilities program is the beginning of the end of the raw materials program. Of the facilities completed in 1942, the largest proportion—70 per cent—went into ordnance, aircraft, and shipway facilities, while only 21 per cent went into raw materials. This year, on the other hand, 40 per cent of the facilities scheduled for completion is destined for raw materials and 50 per cent for end munitions.

## B&O Accepts Bid for $4,000,000 Proposed Issue

The Baltimore and Ohio Railroad has announced acceptance of a bid from Halsey, Stuart & Company, Inc., with whom were associated a number of other financial houses, for its proposed issue of $4,000,000 3% ten-year Equipment Trust Certificates Series M. The bid was for 100.057 plus accrued interest from May 1, 1943, the date of the issue, and was accepted subject to the approval of the Interstate Commerce Commission.

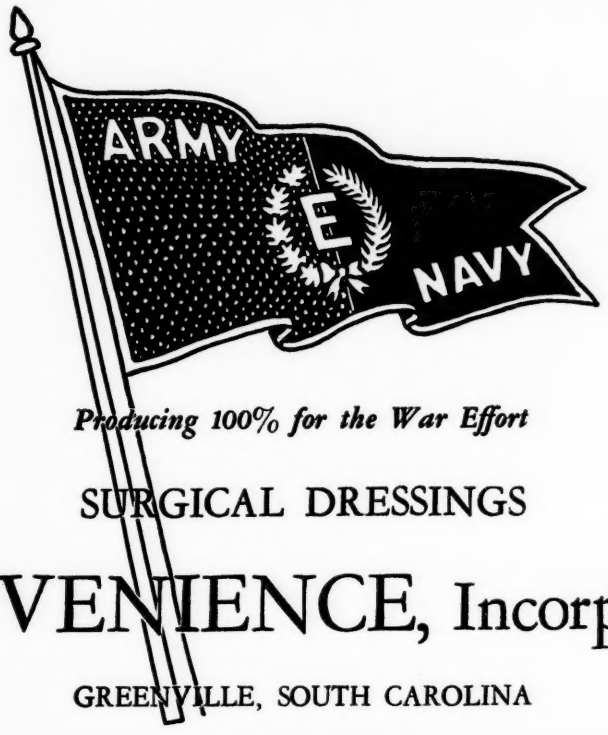
This offer is the second installment of a total issue of approximately $10,760,000 of the Series M Trust Certificates, $3,500,000 of which were previously issued and sold.

## T. C. I. Traffic Manager Dies

J. H. Schroeder, 58, traffic manager of the Tennessee Coal, Iron and Railroad Company, died suddenly on August 24 following a heart attack earlier in the evening at his residence.

Mr. Schroeder came to Birmingham from Pittsburgh, Pa., in August, 1933, as assistant traffic manager. In February, 1938, he was made traffic manager of the Tennessee Company. He became identified with United States Steel Corporation subsidiaries in 1914, giving him nearly 30 years service.

Mr. Schroeder was widely known in traffic circles in Alabama and the South. He was a member of the board of governors of the Birmingham Traffic and Transportation Club, a member of the Alabama Iron and Steel Shippers Conference, the Southeast Shippers Advisory Board and the Birmingham Country Club.

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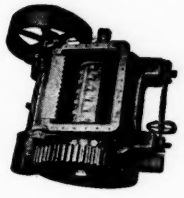


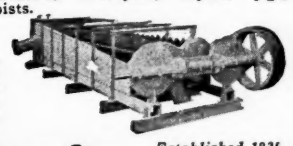
**McLANAHAN EQUIPMENT**

**CRUSHERS**

Single and double roll and jaw crushers, hammer mills, super dry pans—steel log washers and scrubbers, sand drags, revolving and vibrating screens, elevators, conveyors, dryers, jigs, hoists.

**SCREENS**

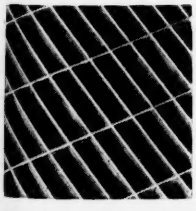
Complete portable, semi-portable and stationary crushing, screening and washing plants for different capacities of any materials.



**McLanahan & Stone Corp.** *Established 1835* HOLLIDAYSBURG PENNSYLVANIA

OPEN STEEL MESH FLOORING **IRVING GRATING PRODUCTS** VIZABLEDG SAFETY TREADS

*"A Fitting Grating For Every Purpose"*



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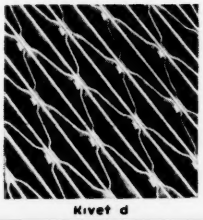
Easy to Place



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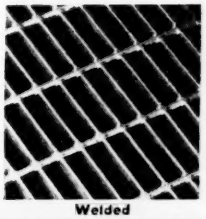


Welded

**IRVING SUBWAY GRATING CO., INC.**

MAIN OFFICE AND PLANT: 5031 27 ST., LONG ISLAND CITY, 1 NEW YORK — ESTABLISHED 1902 — WESTERN DIVISION: FT. OF PARK AVE., EMERYVILLE, 8 CALIFORNIA

## Concrete Replaces Steel in Water Tanks

The familiar steel water tank, mounted high on a framework of structural steel, which has become almost a symbol of American industry has been added to the long list of items for which steel is not available.

That is why the attention of so many who view the huge Dodge Chicago Plant, Division of Chrysler Corporation, from a distance is first attracted by what appears to be a towering concrete silo. That is the first of a new type of water tank construction which has just been completed.

Plans for this plant, where large airplane engines will be built, had already been drawn when the WPB ruled out the use of structural steel for new building—and water tank—construction. Nothing daunted, Albert Kahn Associated Architects and Engineers, Inc., in cooperation with Chrysler Corp., promptly produced a modernized design that required less steel than ever before used in such a building and for almost none in the two tanks.

The tanks themselves are made of cypress. Each has a capacity of 100,000 gallons and is mounted 125 feet above grade on a cylindrical tower of reinforced concrete. Over 60 tons of steel were saved by using concrete and wood.

But that was not all. Having been required to design a new type of water

tank construction, the engineers proceeded to incorporate several notable advantages in it. They put the pump pit inside the base. No frost casing was necessary because water pipes are entirely enclosed within the tower. There is also a ladder, with landings at intervals, inside the tower. And finally, provision has been made for hanging 100-foot lengths of a fire hose inside to drain.

## Summers Fertilizer Co. Appointment

William H. Gabeler has been appointed Vice President of the Summers Fertilizer Company of Baltimore, Md., according to announcement made by J. E. Totman, President.

Mr. Gabeler will be located at the main office of the Company in Baltimore, where he will be in charge of the Company's development of its chemical and food processing plans.

Mr. Gabeler, prior to joining the Summers' Organization, was Assistant Vice President of The Davison Chemical Company in Baltimore with whom he was associated for more than 23 years. Mr. Gabeler, after attending the Massachusetts Institute of Technology, spent two years in Canada in the construction of hydro-electric plants for the Shawinigan Water & Power Company, and the Montreal Light & Power Company. He started in the chemical field with The Barrett Company, at Everett, Massachusetts, as Assistant Superintendent in charge of that plant's operations. He left there to join the Air Forces of the A.E.F. of the First World War. After the war, he became associated with the Davison Chemical Company where his long experience in operations and in the development of processes in the metallurgical and chemical fields, covering the manufacture of Sulphuric Acid, Phosphoric Acid, Superphosphate, Fertilizers, Fluoride Salts, Silica Gels, and the dehydration of Gels, has admirably fitted him for his new connection.

## Fred F. Murray Appointed President of Oil Well Supply Co.

The election of Fred F. Murray as president of the Oil Well Supply Company was announced recently following a meeting of the board of directors of the company in Dallas.

Oil Well Supply Company is a subsidiary of the United States Steel Corporation. The election of Mr. Murray signifies the first time a presidency of the Oil Well Supply Company has come to the Southwest. As such, it also signifies the first establishment of the presidency of a U. S. Steel Corporation subsidiary in the Southwest.

In commenting on the selection, Benjamin F. Fairless, president of United States Steel Corporation, said:

"The election of Mr. Murray as president of this important subsidiary is a source of genuine satisfaction. He is a capable executive with many years experience in the oil well supply business. This is one of the Southwest's most important industries and constitutes a field in which Mr. Murray is well known."

Mr. Murray succeeds Benjamin F. Harris of Pittsburgh, Pa., who resigned some months ago. Mr. Murray has been identified with the oil well supply business since early 1929, in which year he became vice president of Wilson Snyder Manufacturing Company of Pittsburgh, Pa. That company was acquired the same year by Oil Well Supply Company, and at the same time Mr. Murray was elected vice president of Oil Well Supply Company. He moved to Oil City, Pa., where he was in charge of manufacturing.

In 1930, Oil Well Supply Company became a U. S. Steel Corporation sub-

*Fred F. Murray, the newly appointed president of Oil Well Supply Co.*

sidiary, and subsequently Wilson Snyder was made a division of "Oil Well."

Early in 1936, four years after general headquarters of the company had been transferred from Pittsburgh to Dallas, Mr. Murray moved to Dallas as the ranking vice president.

Mr. Murray is president of the Petroleum Equipment Suppliers Association and a director of the American Petroleum Institute.

## Southwestern Power Plant Placed in Operation

Houston Lighting & Power Co., Houston, Texas, has placed its new 37,500-kilovolt-ampere power plant in operation, adding nearly 50,000 horsepower to the company's capacity. Of modern design, the plant is built to meet wartime and blackout conditions. Its apparent architectural feature is the absence of windows and the use of ventilation for all operating spaces. A minimum of steel, copper and other critical war materials was utilized in construction and much of the equipment usually housed in has been placed outdoors, including the crane and many of the pumps, fans and motors.

The main turbo-generating unit was supplied by General Electric Co. This machine is rated at 30,000 kilowatts but has a capacity in excess of 37,500 kilowatts.

# Your Bond Selling Responsibilities Double!

Starting September 9th, your Government will conduct the greatest drive for dollars from individuals in the history of the world—the 3rd War Loan.

This money, to finance the invasion phase of the war, must come in large part from individuals on payrolls.

*Right here's where YOUR bond selling responsibilities DOUBLE!*

For this extra money must be raised *in addition* to keeping the already established Pay Roll Allotment Plan steadily climbing. At the same time, every individual on Pay Roll Allotment must be urged to dig deep into his pocket to buy *extra* bonds, in order to play his full part in the 3rd War Loan.

Your now *doubled duties* call for these two steps:

1. If you are in charge of your Pay Roll Plan, check up on it at once—or see that whoever is in charge, does so. See that it is hitting on all cylinders—*and keep it climbing!* Sharply increased Pay Roll percentages are the best warranty of sufficient post war purchasing power to keep the nation's plants (*and yours*) busy.

2. In the 3rd War Loan, every individual on the Pay Roll Plan will be asked to put an *extra two weeks salary* into War Bonds—over and above his regular allotment. Appoint yourself as one of the salesmen—and see that this sales force has every opportunity to do a real selling job. The sale of these *extra* bonds cuts the inflationary gap and builds added post-war purchasing power.

Financing this war is a tremendous task—but 130,000,000 Americans are going to see it through 100%! This is their own best *individual* opportunity to share in winning the war. The more frequently and more intelligently this sales story is told, the better the average citizen can be made to understand the wisdom of turning every available loose dollar into the finest and safest investment in the world—United States War Bonds.

★ ★ ★

## BACK THE ATTACK With War Bonds!

*This space is a contribution to victory today and sound business tomorrow by* Manufacturers Record

## South's Construction by States

| | August, 1943 Contracts Awarded | August, 1943 Contracts to be Awarded | Contracts Awarded First Eight Months 1943 | Contracts Awarded First Eight Months 1942 |
|---|---|---|---|---|
| Alabama | $7,607,000 | $3,585,000 | $40,413,000 | $111,843,000 |
| Arkansas | 1,354,000 | 530,000 | 29,344,000 | 74,351,000 |
| Dist. of Col. | 559,000 | 475,000 | 11,827,000 | 58,618,000 |
| Florida | 17,406,000 | 19,101,000 | 142,625,000 | 213,067,000 |
| Georgia | 10,743,000 | 7,541,000 | 76,845,000 | 143,629,000 |
| Kentucky | 2,104,000 | 3,061,000 | 29,215,000 | 101,538,000 |
| Louisiana | 10,683,000 | 6,585,000 | 62,270,000 | 178,701,000 |
| Maryland | 6,519,000 | 3,688,000 | 74,336,000 | 151,900,000 |
| Mississippi | 2,130,000 | 4,475,000 | 31,243,000 | 152,348,000 |
| Missouri | 3,0 8,000 | 5,895,000 | 18,290,000 | 158,066,000 |
| N. Carolina | 4,379,000 | 3,153,000 | 41,595,000 | 155,840,000 |
| Oklahoma | 6,154,000 | 8,800,000 | 82,086,000 | 158,393,000 |
| S. Carolina | 2,850,000 | 3,467,000 | 42,667,000 | 66,569,000 |
| Tennessee | 18,825,000 | 2,604,000 | 84,723,000 | 234,394,000 |
| Texas | 19,216,000 | 25,352,000 | 270,295,000 | 786,060,000 |
| Virginia | 7,781,000 | 12,510,000 | 61,523,000 | 218,967,000 |
| W. Virginia | 486,000 | 975,000 | 8,868,000 | 35,738,000 |
| TOTAL | $121,790,000 | $112,297,000 | $1,108,185,000 | $3,000,022,000 |

## Public Building

(City, County, Federal; Housing; Schools)

| | August, 1943 Contracts Awarded | August, 1943 Contracts to be Awarded | Contracts Awarded First Eight Months 1943 |
|---|---|---|---|
| Alabama | $4,215,000 | $1,753,000 | $21,769,000 |
| Arkansas | 105,000 | 115,000 | 12,286,000 |
| Dist. of Col. | 355,000 | 375,000 | 4,813,000 |
| Florida | 10,103,000 | 9,192,000 | 61,508,000 |
| Georgia | 1,867,000 | 3,068,000 | 51,163,000 |
| Kentucky | 421,000 | 2,011,000 | 6,301,000 |
| Louisiana | 2,335,000 | 2,460,000 | 15,231,000 |
| Maryland | 2,161,000 | 2,443,000 | 25,671,000 |
| Mississippi | 873,000 | 2,480,000 | 19,734,000 |
| Missouri | 761,000 | 1,485,000 | 7,444,000 |
| N. Carolina | 1,508,000 | 2,665,000 | 23,478,000 |
| Oklahoma | 2,467,000 | 3,305,000 | 13,283,000 |
| S. Carolina | 1,662,000 | 2,282,000 | 27,955,000 |
| Tennessee | 289,000 | 1,985,000 | 34,582,000 |
| Texas | 2,403,000 | 12,537,000 | 105,631,000 |
| Virginia | 6,926,000 | 10,998,000 | 53,174,000 |
| W. Virginia | 5,000 | 206,000 | 5,972,000 |
| TOTAL | $38,456,000 | $59,360,000 | $492,008,000 |

## Industrial

(Including Private Utilities)

| | August, 1943 Contracts Awarded | August, 1943 Contracts to be Awarded | Contracts Awarded First Eight Months 1943 |
|---|---|---|---|
| Alabama | $35,000 | $1,282,000 | $5,423,000 |
| Arkansas | 24,000 | 10,000 | 5,250,000 |
| Dist. of Col. | ..... | ..... | 3,750,000 |
| Florida | 350,000 | 25,000 | 5,518,000 |
| Georgia | 1,214,000 | 1,150,000 | 3,293,000 |
| Kentucky | 635,000 | ..... | 13,997,000 |
| Louisiana | 217,000 | 1,580,000 | 14,149,000 |
| Maryland | 910,000 | 270,000 | 5,774,000 |
| Mississippi | ..... | 60,000 | 424,000 |
| Missouri | 1,980,000 | ..... | 7,371,000 |
| N. Carolina | 10,000 | 255,000 | 4,547,000 |
| Oklahoma | 400,000 | ..... | 31,050,000 |
| S. Carolina | ..... | ..... | 5,679,000 |
| Tennessee | 18,175,000 | 514,000 | 40,047,000 |
| Texas | 3,602,000 | 2,695,000 | 80,559,000 |
| Virginia | 426,000 | ..... | 2,908,000 |
| W. Virginia | 285,000 | 109,000 | 455,000 |
| TOTAL | $28,283,000 | $7,950,000 | $230,263,000 |

## Public Engineering

(Dams, Drainage, Sewers, Waterworks, etc.)

| | August, 1943 Contracts Awarded | August, 1943 Contracts to be Awarded | Contracts Awarded First Eight Months 1943 |
|---|---|---|---|
| Alabama | $2,600,000 | $50,000 | $7,777,000 |
| Arkansas | 1,090,000 | 155,000 | 8,976,000 |
| Dist. of Col. | 171,000 | 100,000 | 786,000 |
| Florida | 4,197,000 | 7,580,000 | 49,586,000 |
| Georgia | 2,728,000 | 535,000 | 13,179,000 |
| Kentucky | ..... | ..... | 3,118,000 |
| Louisiana | 6,619,000 | 405,000 | 23,705,000 |
| Maryland | 1,018,000 | 170,000 | 24,464,000 |
| Mississippi | 746,000 | 770,000 | 7,607,000 |
| Missouri | ..... | 4,145,000 | 1,118,000 |
| N. Carolina | 2,715,000 | 133,000 | 10,795,000 |
| Oklahoma | 1,314,000 | 5,265,000 | 27,568,000 |
| S. Carolina | 460,000 | 235,000 | 6,864,000 |
| Tennessee | 216,000 | ..... | 5,891,000 |
| Texas | 3,943,000 | 3,827,000 | 49,107,000 |
| Virginia | 137,000 | 990,000 | 1,361,000 |
| W. Virginia | ..... | 450,000 | 150,000 |
| TOTAL | $27,954,000 | $24,840,000 | $241,452,000 |

## "Re-Appraising Arkansas"

(*Continued from page* 68)

available figures) produced approximately two billion feet of lumber and 683,300 cords of pulp wood, the manufactured value of which was more than $96,000,000.

These resources it is believed will foster further industrial expansion especially along the lines of aluminum fabrication as a probable sequence to the existing extensive mining and processing facilities in that field. From the State's cotton, in addition to present large extraction of oils, cake meal and linters, should come further textile manufacturing: likewise the ever expanding derivatives of cotton and cotton oil. From its timber, should come the further development of paper and pulp mills, textile mills and expanded facilities for the manufacture of plywood, containers, furniture, building materials, and chemical by-products. Its petroleum, oil and natural gas offer possibilities for chemical extraction, hardly less important than their primary usage as cheap fuel. Its extensive clay and sand deposits provide a base for expansion of present facilities for ceramic production, such as glass, brick and pottery. Plastics, from whatever base desired, appear destined for representation among the State's industries.

## Ethyl Cellulose Production Doubled to Meet War Needs

(*Continued from page* 69)

and not get tacky in summer heat. No other type of coating tested measured up to Army requirements. The color will not run, and it is possible to keep the reverse side of the identification cloth panel a pure white color.

The present uses for ethyl cellulose are strictly in line with its inherent properties. Where performance specifications have been set up for a thermoplastic material to meet the rigors of field operations in both freezing and tropic conditions, such as the Signal Corps flashlight and the QMC Canteen, ethyl cellulose has out-performed the other materials submitted and has been used.

Chemically described as belonging to the class of cellulose ethers, ethyl cellulose is made by treating cellulose, either purified cotton linters or wood pulp, with caustic to make an alkali cellulose which in the presence of ethyl chloride or ethyl sulfate will react to leave the ethyl groups anchored to the cellulose by an ether linkage.

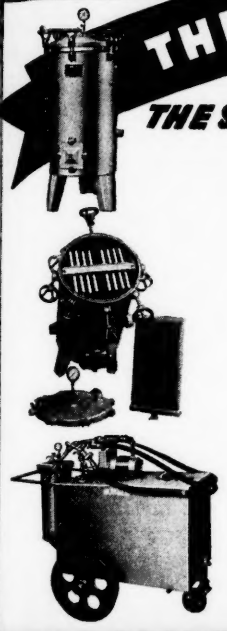
Ethyl cellulose has exceptional dimensional stability under troublesome weathering conditions, such as heat and humidity. It can resist the lowest freezing temperatures better than any known plastic and yet be formulated to stand temperatures as high as 175°F., and, in addition, it possesses remarkable impact strength.

These important properties are supplemented by other factors of almost equal importance. It has the lowest density of any of the cellulose products, meaning lighter weight and more pieces per pound. It has a wide range of compatibility with chemical plasticizers, vegetable and mineral oils, waxes, and resins; this offers a multitude of combinations. These many modifiers can be selected for best heat stability, water insolubility, stability to light, hardness, flow, and other properties.

Its ability to hold high concentrations of plasticizer, especially cheap oils, makes it of interest for nonrigid plastics such as tubes, mats, sheets, and extruded shapes. It does not possess the bounce of rubber in these soft formulations, but has better resistance to gasoline and ozone than natural rubber. Of course, ozone resistance is important electrically where ethyl cellulose is of interest as extruded wire insulation because of excellent dielectric properties. For service raincoats, the toughness and flexibility especially at low temperatures plus its resistance in certain formulations to mustard gas make it interesting.

Hercules Powder Company, which manufactures ethyl cellulose, first introduced it to this country in 1935 and is the nation's largest producer of purified cotton linters from which cellulose plastics are made.

# THE SOONER WE REDUCE SCRAP



THE SOONER THEIR JAPAN ITALY GERMANY WILL BE UP!

The fate of the Axis leaders is being written right now in American war plants! The more that can be produced . . . the sooner it can be gotten to the fighting fronts . . . the sooner will that day of "unconditional surrender" arrive. To help do the job, many war plants are using Bowser Filtration systems to keep cutting oils, coolants, grinding oils, honing oils, broaching and thread cutting oils clean. By doing this, many of them report production increases . . . of 27% . . . 42% and more; scrap reductions of 40%, 60%, 80%; less man power and in some cases, with fewer machines. Maybe we can help you, too. A call will put us on the job. Why not do it now?

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*Manufacturers of Fine Cotton Fabrics*

**J. P. STEVENS & CO. INC., *Selling Agents***
44 Leonard St., New York, N. Y.

# Cotton Mills and the War

(*Continued from page* 61)

check it carefully and re-work it? Did you list all the things that the employees individually could do? Did you put some spinners to weaving and some battery hands to oiling, and some sweepers to doffing? What about the women folk? Any of them driving trucks; hauling warps; doffing; oiling; working in the machine shop?

What did you do about eliminating critical materials? Did you use wood instead of stainless steel in building dye and chemical tanks? Did you cut down your worn out large gears and make small gears? Did you re-bush your shipper handles, metalize your crank shafts?

How much brazing and welding did you do?

There are a lot of critical fats and oils. Did your chemist or chemical company help you work out this sort of problem to where you would use the least critical material? I'll say they did. Nobody has come to bat more faithfully, and cleanly, and energetically than have the dye stuff and chemical companies. They have come into our plants with hundreds of saving devices and new uses. (Those scoundrels messed us up every once in a while, but they were trying, and that is all we want).

What about your old belts? Did you keep them oiled, clean, soft and pliable? Did you set up a plan to re-work them? Leather is mighty scarce.

Nails! Think of the nails that are being driven into boards—three nails where two would do, and then two on the ground.

What are we doing with the old cotton ties?

Are you watching the combustion in your boilers? Are your boilers steaming out black smoke? Does your fireman know what he is supposed to do to attain efficient firing?

Think of all the paper we use! Paper to line boxes and bales; paper to wrap cones and tubes. Did you re-use this paper? Think of all the cloth tubes and yarn tubes and cones we use. Have you been conserving in this respect? Did you re-use any of them?

What did you do towards improvement in your mechanical department? Have you worked at improving your drafting; increasing your speeds; increasing the size of your packages? What did you do around your slashers? Are the necks of your spinning steel rollers in good condition? What kind of shape are your bolsters in? Is your shafting in line? How badly are the pulleys on your motors worn? (An eighth of an inch makes a lot of difference in production). Is your machinery level and in line? Are your gears properly meshed? HOW DO YOU KNOW ABOUT THESE THINGS?

And in the final analysis, the most important of all —what kind of cloth are you making? Is it wide enough? Has it got enough picks in it? Is the warp count correct? Does it weigh right? Is it up to breaking strength and over? Has it got gouts in it? Have you got a lot of seconds hanging around? What kind of yarn are you making? Is it smooth and round and up to strength? Is it wound properly on your tubes and cones? Is it put in cases, or bales, correctly and shipped carefully?

These are a lot of questions, but I think the cotton mills know these questions and have known them a long time, and have got them listed down and have answered them—and they have answered them right. More than right—because they have been there with the pounds, and been there with the pounds on time.

The industry hasn't asked for any new money. They haven't been before the RFC. Very few of them know Mr. Jesse Jones. They haven't borrowed money from their friends in competition with war bonds. They might have to borrow a little now because we as an industry, need some twisters for cotton tire-cord. The twisting capacity that we had is now going into such things as ammunition slings, anti-aircraft gun covers, bandoleers, boat covers, bunk bottoms, coal bags, deck awnings, gun covers, hose racks, instrument covers, pneumatic rafts, stretchers, and water bags. We are justified in such necessary borrowing.

It is true that we had to come through in a hurry in the beginning on duck, but look what a grand job the carpet manufacturers did in converting from carpet to duck—and now the demand for duck has been met. The binder twine came through; the herringbone was a little slow but it too finally came through; the Osnaburg was on hand. I heard them tell about flying some camouflage uniform cloth from the East to the West coast when they learned of its need in the Southwest Pacific.

There are a swell bunch of men in this industry who are doing their level best to "come across" with the goods—and on time.

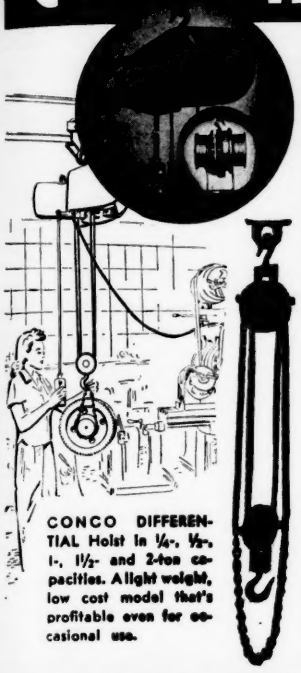
I can't talk about cotton textiles without mentioning the tremendous activity that is going on in research. Thousands of orders have been given for replacement machinery because, try as we might in our maintenance program, we are certainly wearing ourselves out.

Fess Blanchard is working as hard as he and his group know how to develop new and better uses for all types of fibers. Fuller Callaway and the group that he has around him have their thoughts in the top of their minds towards after-the-war developments of cotton. The National Cotton Council has just established a research department in Memphis, and a recent discussion with the head of it develops that they are coming along in grand shape. The Government itself down in New Orleans is giving high promise for the development of our fiber. The Cotton Textile Institute is working as hard as it knows how, and as intelligently, on new uses for cotton. And, as I said in the beginning of this article, the chemical companies themselves have this phase of our work scattered throughout their laboratories.

I hope we, as an indispensable industry, are doing a good job. I hope the cotton textiles are coming through with flags over their mills. They are trying mighty hard.

# CONCO HOISTS

## Meeting Your Needs Today!



Several construction features adapt the Conco Torpedo Electric Hoist to women operators in your plant: Push button control, for easy, one-hand operation; Double drum construction for perfect load balance; Electric brake; Positive limit switch. Available in 250-, 500- and 1000-lb. capacities. Write us for our outstanding delivery and full information.

CONCO DIFFERENTIAL Hoist in ¼-, ½-, 1-, 1½- and 2-ton capacities. A light weight, low cost model that's profitable even for occasional use.

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Single Fold, Double Fold or Black Core—for dependable quality.
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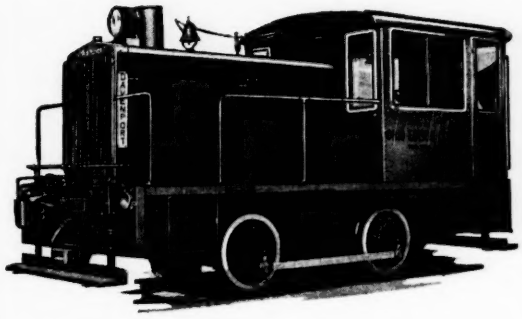
# ONE EYE ON THE FUTURE



MOST business men are doing a lot of solid thinking against the day when hostilities cease. Nor are they neglecting for an instant the grave responsibilities of war. They drive themselves in support of increased production. They are positive, dependable units in the unbeatable aggregate we call Democracy. The time they give to post-war planning simply adds to the fervor of their war service because it makes them see more vividly the stakes for which we are fighting. No wonder many are giving thought NOW to the superb performance of Better-Built Davenports on those bigger haulage operations that merely await the passing of a little more time—until VICTORY.

DAVENPORT LOCOMOTIVES

*Better-Built*
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*are AVAILABLE in*
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**GASOLINE**
**DIESEL**
with
**ELECTRIC**
or
**MECHANICAL DRIVE**

**We, Too, are LOOKING AHEAD**

Today, our facilities are devoted to the production of Davenport Locomotives for WAR. Thus, we are able to accept but few orders from private customers. We are, however, perfectly willing to assist in the determination of sizes and types of locomotives required when the shooting is over. This will insure early post-war deliveries. We have been constantly alert to improvement throughout this period and will offer power units of more outstanding value than ever before.

We, who are building locomotives for WAR, know the value of SCRAP. Are you stumbling over old metal every day, unthinking? Put the finger on it. Rush it off to the steel mills — for VICTORY.

UNCLE SAM NEEDS ALL OF YOUR SCRAP NOW!

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**DAVENPORT LOCOMOTIVE WORKS**
A DIVISION OF DAVENPORT BESLER CORPORATION, DAVENPORT, IOWA

## Bomber Noses Now Made In Knoxville

(*Continued from page* 63)

borrowed from current practices in the petroleum industry. As in most continuous operations, much care was given to modern control equipment.

The 20 wood and brick buildings on the site which once housed the Briggs Manufacturing Company, makers of hardwood automobile bodies, and in the last war the scene of production of shells for our allies, are situated inland from both coasts and borders. With ample water, sewerage and electric power from local utilities, the plant is also favorably flanked by two railroads. The Knoxville area has been able to supply practically all the required labor—over 1500 men and women.

Opening of the new plant quadruples the production of Plexiglas sheets for military aviation purposes, lifting the output of this product to a volume more than 40 times greater than at the outbreak of World War II. This tremendous expansion has been necessitated by the stepped-up aircraft production program which calls for vast numbers of transparent bomber noses, gun turrets, optically precise astrodomes, cockpit covers and other transparent plane parts. The production of large sheets such as those made at Knoxville has made possible the significant changes in aircraft design which added to our planes "an offensive and defensive strength not held by those of other countries," in the words of the John Wesley Hyatt Award Committee who last year conferred the award on Dr. D. S. Frederick for an outstanding contribution to the plastics industry.

*Consult*

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Earle Gear is serving engineers and bridge constructors through the manufacture of special machinery for operating all types of bridges — swing, vertical lift, rolling lift, bascule and ferry transfer. Earle also builds special machinery to operate sewage disposal plants, locks, dams, gates, dredges, etc. Request Bulletin 42-B.

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EARLE GEARS


## New Industrial Plants and Expansions in the South

(*Continued from page* 67)

systems will be built in Sullivan City field in western Hidalgo, Royle, Rio Grande City, Lockhart and Guerra fields in Starr; estimated cost $50,000.

**McALLEN**—addition—L. H. Moore Canning Co., M. Moore, plans addition to processing plant, 206 19th St.; cost $30,000.

**McALLEN** — addition — Marshall Can-

(*Continued on page* 87)


NEW EDITION READY

**The American Bank Reporter**

Published July, November, March

CONTENTS

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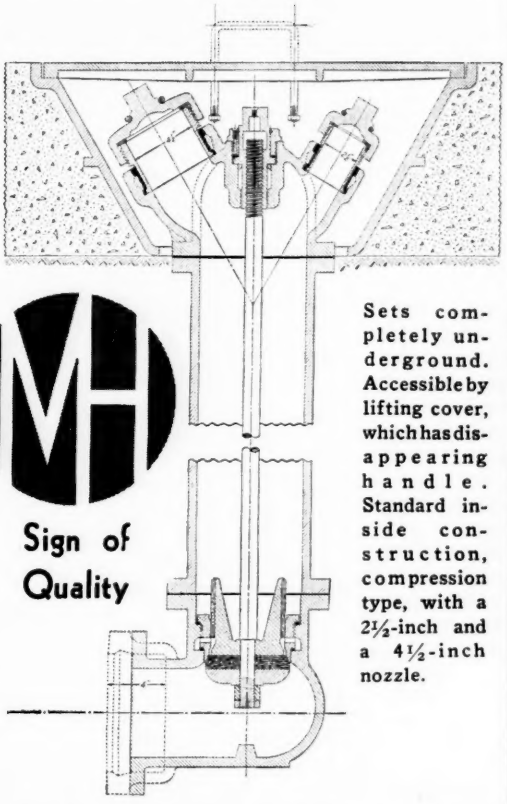
——TO
MATHEWS COTTON MILL

Victory for our side shall begin in the mills . . . on the farms . . . and in the shipyards of our country. When our Battle of Production is won, then shall follow Final Victory on the actual fighting fronts. With the Army-Navy "E" Pennant as our inspiration, we of Mathews Cotton Mill shall redouble our efforts to add to the sum total of our fighting equipment. The "E" award was made to this organization as a whole . . . management and labor working side by side for a common goal. That is the way it shall continue . . . with the "E" representing EFFORT in the future as well as EXCELLENCE of past performance.

MATHEWS COTTON MILL
GREENWOOD, S. C.

Mathews employees reside in these bright, modern, cheerful homes of the Mathews Mill Village.

FLUSH TYPE
Fire Hydrant



Sets completely underground. Accessible by lifting cover, which has disappearing handle. Standard inside construction, compression type, with a 2½-inch and a 4½-inch nozzle.

Sign of Quality

Used in places where a standard hydrant, protruding above ground, might interfere with traffic or industrial operations. Furnished complete with Cast Iron nozzle box and cover.

M & H STANDARD FIRE HYDRANTS are revolving head, dry top, bronze mounted. They are approved by "UA&FM". Entire main valve assembly is removable through barrel without digging. Special Traffic Model is fitted with breakable bolts and stem coupling, designed to break at ground line under impact. Repairs are made simply by renewing bolts and coupling, without shutting off the water.

M & H PRODUCTS INCLUDE

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| TAPPING VALVES | VALVE BOXES |
| WALL CASTINGS | FLAP VALVES |
| SPECIAL CASTINGS | SLUDGE SHOES |
| TAPPING SLEEVES | FLANGE AND FLARE FITTINGS |
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| FLOOR STANDS | B & S FITTINGS |
| EXTENSION STEMS | CUTTING-IN TEES |

WRITE FOR PRICES

M&H VALVE
AND FITTINGS COMPANY
ANNISTON, ALABAMA

## Nation's Largest Synthetic Rubber Plant Starts Operations in Texas

*(Continued from page 64)*

ment tire-type rubber is designated, the big polymerization plant uses butadiene and styrene from the Lone Star State's petroleum in making crude synthetic rubber which is then processed into tires, tubes and other essential products in regular rubber manufacturing plants.

When all the synthetic rubber plants of the state are in full operation, Vaught said, Texas' share in the nation's synthetic rubber program will amount to more than one-third the national total, with 255,000 tons of GR-S to be produced.

The B. F. Goodrich executive told Texas civic, state and industrial leaders at a reception to mark "Rubber Rancho's" initial production, because location of so much of the synthetic rubber capacity in the state was a milestone in Texas' transition from a raw materials supplier into a state that "makes things." He predicted that there is every likelihood that the synthetic rubber factories will continue operation after the war, saying that while world production of both tree and man-made rubber may total 2,700,000 tons (more than twice the greatest world consumption in any year) the needs of such previously small consumers of rubber as China, India and Russia will create a greatly expanded demand.

"Rubber Rancho" is the third Texas polymerization plant to begin production. Others are at Borger, where a 45,000-ton plant is also operated by Goodrich, and at Baytown, where General is operating a 30,000 ton plant built by Goodyear. A fourth factory, of 60,000-ton capacity, is being built at Houston by Goodyear.

Also under construction at Port Neches, nine miles north of here on the Neches river, is a 100,000-tons per year butadiene plant for the Neches Butane Products Company, a concern formed by the five oil refining companies in the Port Arthur-Beaumont area to make the principal raw material for synthetic rubber manufacture. The man-made variety requires about three parts butadiene and one part styrene plus emulsifiers.

Oil companies backing the Neches Butane Products Company are the Gulf Oil Corporation, The Texas Company, Atlantic Refining Company, Pure Oil Company, and Magnolia Petroleum Company.

## South's Shipyards Deliver 54 Vessels in August

The South's shipyards delivered 54 of the nation's 164 cargo vessels totaling 1,697,400 deadweight tons during August.

The 54 vessels included 42 Liberty Ships, 2 C-types, 5 tankers, 1 coastal tanker, and 4 sea-going tugs.

The number and types of ships built by southern yards during the month follow:

Alabama Dry Dock & Shipbuilding Co., Mobile, Ala., 2 Tankers.

Avondale Marine Ways, Inc., Westwego, La., 1 Sea-Going Tug.

Bethlehem-Fairfield Shipyard, Inc., Baltimore, Md., 16 Liberty.

Bethlehem-Sparrows Point Shipyard, Inc., Sparrows Point, Md., 1 C3 Cargo, 2 Tankers.

Houston Shipbuilding Corporation, Houston, Tex., 7 Liberty.

J. A. Jones Construction Co., Inc., Brunswick, Ga., 2 Liberty.

J. A. Jones Construction Co., Inc., Panama City, Fla., 2 Liberty.

Lancaster Iron Works, Inc., Perryville, Md., 1 Coastal Tanker.

North Carolina Shipbuilding Company, Wilmington, N. C., 8 Liberty.

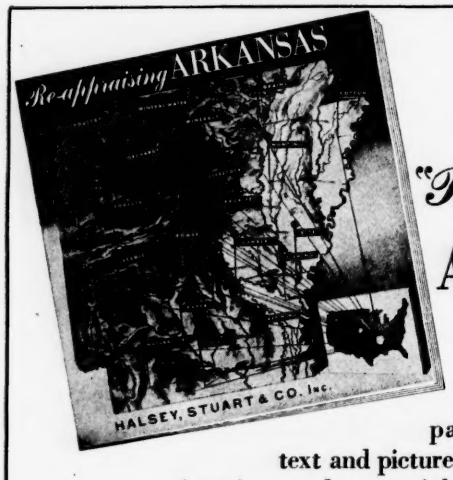
Pendleton Shipyards Company, Inc., New Orleans, La., 1 Sea-Going Tug.

Pennsylvania Shipyards, Inc., Beaumont, Tex., 1 C1 Cargo, 2 Sea-Going Tugs.

St. Johns River Shipbuilding Company, Jacksonville, Fla., 3 Liberty.

Southeastern Shipbuilding Corporation, Savannah, Ga., 4 Liberty.

Welding Shipyards, Inc., Norfolk, Va., 1 Tanker.


"Re-appraising ARKANSAS"

is the title of a new booklet which we have recently prepared, setting forth in text and pictures the resources, present situation, and potential future developement of the State. In view of the changing aspects of our economy, particularly as reflected in the improved status of the southern states and with Arkansas as a good example, banks, industries and investors will find the contents of the booklet of special interest.

*A copy of the booklet will be supplied upon request.*

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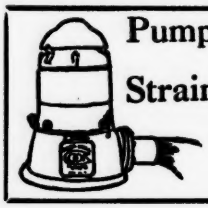

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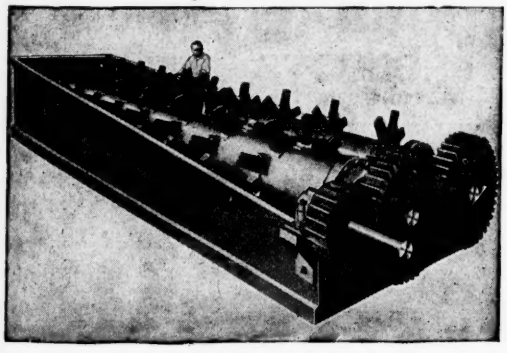

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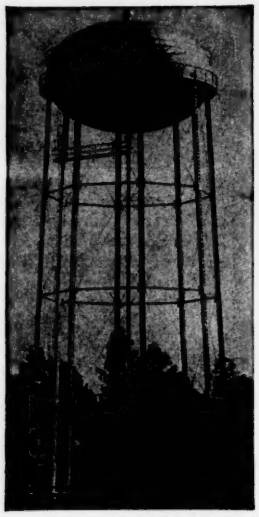

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This ovaloid tank of 200,000 gallons was built and installed by us for the city of Port St. Joe, Fla., the site of the new $6,800,000 paper mill.

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Numerous cities and towns are being served by Cole Tanks including Charlotte, N. C. (million gallon tank); Mobile, Ala.; Gastonia, N. C. (million gallon); Spartanburg, S. C. (million and a half gallon); McPherson, Kan.; St. Petersburg, Fla.; Danville, Ky.; Daytona Beach, Fla.; Gainesville, Ga., etc.

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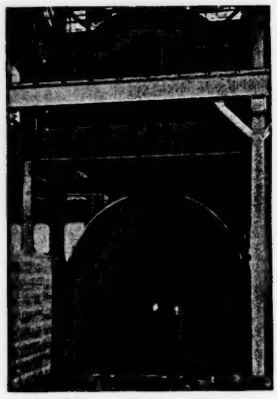

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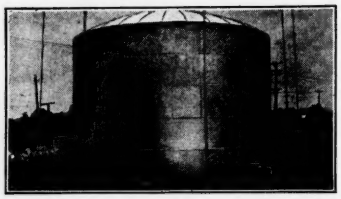

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This applies to field as well as shop built equipment.

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## New Industrial Plants and Expansions in the South

(*Continued from page 80*)

ning Co., C. A. Marshall, plans addition to processing plant, 2201 Beaumont St.; cost $27,192.

**MERCEDES** — remodeling — Rio Banco Farms, C. P. Melton & Sons, 102 Illinois St., acquired building, will remodel for packing plant.

Pipe Line—Federal Power Commission will hold hearing Sept. 15 on application of United Gas Pipe Line Co., Shreveport, La., to remove approximately 8 miles of 12¾ in. pipeline from Waskom area in Harrison County, Tex., and Caddo Parish, La., to vicinity of applicant's Latex compressor station; hearing Sept. 15 for authority to remove approximately 30.6 miles of 18-in. pipeline extending from an interconnection with Southern Natural Gas Co. pipeline near Benton, Miss., to a point in Madison County; hearing of Sept. 16 on application for authority to construct and operate about 2.5 miles of 4½-in. pipeline from South Houma gas field to applicant's proposed DeLarge extension in Louisiana and an application for authority to remove and relocate a section of loop line from company's Baton Rouge-New Orleans line, and to construct and operate about 19 miles of loop line in LaFourche and St. Charles Parishes, La.

### VIRGINIA

**RICHMOND**—expansion—Reynolds Metals Co. acquired 100,000 square feet between Tenth, Eleventh and Byrd Sts., adjoining site recently acquired.

### WEST VIRGINIA

**CHARLES TOWN**—plant—R. J. Funkhouser leased the A. D. Goetz Sons Co. three-story brick manufacturing plant.

**HUNTINGTON**—expansion—Zenith Optical Co., Dr. L. M. Polan, general manager, will expend $34,000 renovating two-story building for company's plant.

CARE AND MAINTENANCE OF
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A HANDY REFERENCE MANUAL FOR OWNERS OF PUMPS—WATER SYSTEMS—POWER SPRAYERS

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GOVERNOR OF TENNESSEE

**Basic Advantages To Plant Locations In Tennessee**

- ★ An unsurpassed variety of major industrial minerals and agricultural products and materials.
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- ★ Uncongested plant sites near basic materials, river and rail terminals.
- ★ Ideal living conditions for both employer and employee.
- ★ Sound State tax structure. No personal earnings or sales taxes.
- ★ State and municipal governments friendly to industry.

Eighteen billion kilowatt-hours is the annual capacity of electric power that will be available to manufacturers in the Tennessee Valley after the war.

The giant hydro-electric system of TVA located on the Tennessee River and tributary streams and steam plants at strategic points, with transmission lines reaching every section of the State, gives to manufacturers in the area an abundance of power and the advantage of the lowest rate in eastern America.

Low-cost power is only one of many advantages to plant locations in Tennessee. Check the other basic advantages listed.

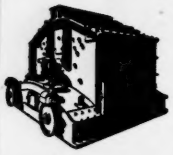
Manufacturers interested in meeting changing conditions and post-war competition should investigate Tennessee now.

Write for specific information and surveys relating to your particular requirements. Ask for illustrated booklet: "Tennessee—Land of Industrial Advantages."

**Governor's Industrial Council, Department of Conservation**
**612 State Office Bldg. Nashville, (3) Tenn.**

Investigate TENNESSEE

# "PENNSYLVANIA" CRUSHERS



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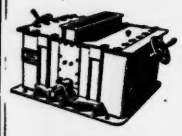
The Central Feed REVERSIBLE is the most outstanding advance in Hammermill design in 20 years. REVERSIBILITY is an exclusive "Pennsylvania" feature. For Limestones, Cement Rocks Gypsums and wide variety of Chemicals and Industrial Minerals. Automatic hammer turning Adjustable Cages . . . Tramp Iron protection. Steelbuilt. Patented.



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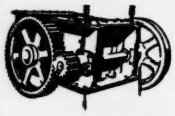

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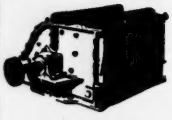

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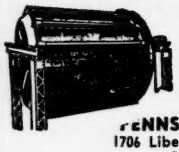

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Reduce R.O.M. for Stoker or Pulverizer feed with absolutely no oversize and low "overgrinding." Crush by gravity impact. Automatically eject, without damage, tramp iron, mine debris and hard rock. Low H. P. . . . slow speed . . . long life. Low up-keep. . . . rugged, . . . thoroughly dependable. 25 to 500 T.P.H. Steelbuilt. Patented.

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